

**CHAPTER 16**  
**OTHER CEQA SECTIONS**



## 16.0 OTHER CEQA SECTIONS

### 16.1 ALTERNATIVES

The discussion of alternatives is required by CEQA to “focus on alternatives capable of eliminating significant adverse environmental effects . . .” or reducing such effects to a level that is less than significant (CEQA *Guidelines*, §15126.(d).(3)).

A variety of project alternatives was considered by the Applicant. Alternatives considered were primarily related to the configuration and components of the project at the Bickford Ranch site. Alternative locations were also considered. To effectively evaluate alternatives, the project objectives were used to determine the reasonableness and feasibility of each alternative. Project objectives (as presented in Chapter 3) considered for the purpose of alternative formulation are described below:

1. Aid the County in meeting its recognized obligation to accommodate a percentage of future population growth in the County in the unincorporated portion of the County by providing 1,950 new residential units in an area identified by the County General Plan as appropriate for such residential development.
2. Establish residential development in an area of the County identified for growth to assist to relieve growth pressures to develop other land in the County having high agricultural value.
3. Create a quality recreation and residential development with a mix of residential, commercial, open space and recreational land uses designed in a manner that provides a distinct identity and sense of place that will be an asset to the region.
4. Establish a high-quality residential community integrated into existing natural open space, native oak woodlands, slopes and ridges, preserving these features to the extent possible.
5. Provide an age-qualified residential community that responds to the market preferences and needs of senior adults as they relate to housing type, size, cost, security, recreational and social amenities.
6. Respect the natural grade, terrain and character of the land by designing residential communities with respect to existing resources and topography, especially around the perimeter of the site to minimize impacts to off-site viewsheds.
7. Provide all public facilities and services necessary to meet the needs of development within the Plan Area.

If no residually significant impacts are associated with the proposed project for an environmental area, the alternative is evaluated only for its potential to result in significant impacts not associated with the proposed project. If significant residual impacts are associated with the proposed project, the alternative is evaluated for its potential to eliminate such impacts, reduce them to a level that is less significant, increase their magnitude, or result in additional significant impacts beyond those associated with the proposed project. If beneficial effects are associated with the proposed project, the alternative is evaluated for its potential to result in a similar beneficial effect. The mitigation measures identified for proposed project impacts would apply to the alternatives analyzed, where impacts are similar in nature and the mitigation measure would reduce the impact of an alternative to a less than significant level.

Some project alternatives were initially considered but not carried forward for analysis because they could not sufficiently meet one or more of the proposed project objectives, or were economically infeasible. Both the alternatives considered and eliminated from further detailed analysis and the alternatives analyzed in this EIR are discussed below.

### 16.1.1 Alternatives Considered and Eliminated from Further Consideration

Development of the project site has been under consideration for 10 to 15 years, during which time several land plans have been considered. There has likely been more focus on development at the proposed project site than at many other locations because most of the site has been under one ownership, making it potentially easier to develop. Its development potential is also enhanced by its proximity to other adjacent planned developments under city jurisdictions, and because it is conveniently located near I-80.

The County's General Plan identifies the site as one of two specific areas in unincorporated south Placer County where development is encouraged. During the General Plan update process, the County determined that higher density projects would be best developed within city jurisdictions identified for such projects. Areas that would be conducive to such higher-density projects include the Stanford Ranch area and the (formerly Urban Reserve) Specific Plan areas within the City of Roseville. There are no other general plan or zoning designated sites in the County that could accommodate the proposed project. Because of these factors and the identification of the site as the Bickford Ranch Specific Plan Area through the General Plan process, off-site alternatives were not evaluated further in this Draft EIR. Many development scenarios that have been considered and rejected are described below.

#### Land Development Alternatives

Several land development scenarios have been considered. Lower density projects not identified as alternatives carried forward for more detailed analysis below (Section 16.1.2) were either substantially similar to the alternatives in this Draft EIR or were not economically feasible due to the high cost of infrastructure development relative to the number of units. A more intensively mixed-use development, including apartments and townhomes with zero lot lines, was rejected because it would create an undesirable, more urban environment. A clustered development, with attached units concentrated in specific locations surrounded by larger areas of recreational or open space, was rejected because the residential market no longer demands this type of development. Development of smaller neighborhood parks and scattered mini-parks, instead of the larger parks proposed by the Applicant, was considered because it would enhance access to some kinds of recreational activity by residents of the proposed project. However, without reducing the number and/or size of lots or reducing and/or eliminating other proposed amenities, this alternative would preclude larger areas within parks that could be used for ball fields or other events requiring a larger, unobstructed turf field area. Reducing the number of units within the Meadows community, which is more visible because of its topography and proximity to unshielded views from Sierra College Boulevard, was rejected because this would move more development to the ridgeline areas and increase adverse visual impacts associated with development in these areas.

#### Commercial Center Alternatives

Other locations for the proposed commercial center were considered. The County's planning department has encouraged locating the commercial center where it could best serve the internal needs of the project's residents. If the commercial center were located at "edge" intersections (i.e., the intersection of SR 193 and Sierra College Boulevard or the intersection of Sierra College Boulevard and Lower Ranch Road), it would not be centrally located for residents. Such locations would be particularly undesirable for residents of the Heritage Ridge community, and would not allow access by golf carts. Locating the

commercial center at the intersection of Sierra College Boulevard and Bickford Ranch Road would be a slightly more central location, but this alternative was rejected because the topography in this location is not suitable, and this alternative would require major grading. It also would not be accessible by golf carts.

### **Golf Course Alternative**

The feasibility of including a second golf course in the Meadows area was considered. A golf course would provide a more urban setting in an area where a more rural development was preferred. Because of the cost of the golf course, the same number of residential units as for the proposed project would still be necessary from a project feasibility standpoint; this would result in smaller residential lots in the Meadows area and also contribute to a more urban setting. For these reasons, a second golf course in the Meadows was rejected.

### **Access Alternatives**

Since the General Plan identifies four lanes on Sierra College Boulevard in 2010, no additional improvements were considered for this roadway. At one time, a major road connecting SR 49 to SR 65 was considered. This road would leave SR 49 north of Auburn, traversing the Twelve Bridges Specific Plan area and Bickford Ranch. It would have crossed the Ridges area near the antenna on the east side of the project site, then connected to SR 65 by the City of Lincoln. For the proposed project, accommodation of this alternative was rejected because of difficult topography, access issues, and because an interchange with this new roadway and Sierra College Boulevard would not be feasible without extensive grading.

## **16.1.2 Alternatives Selected for More Detailed Analysis**

Project objectives and feasibility narrowed the alternatives for analysis in this Draft EIR to those described below. This analysis evaluates alternatives for their ability to eliminate or substantially reduce residual (post-mitigation) impacts or effects attributed to the proposed project.

The No Project Alternative (Alternative 1) and six “action” project alternatives, described below, were selected to represent the range of project options for purposes of evaluating environmental impacts. In addition to the No Project Alternative, project alternatives include the following:

- Alternative 2: Reduced Density Alternative
- Alternative 3: Conventional Housing Alternative
- Alternative 4: Rural Residential
- Alternative 5: Clark Tunnel Road Alternatives, including the following:
  - Sub-Alternative 5-1: Retain Full Vehicular Access
  - Sub-Alternative 5-2: Retain Vehicular Access to Penryn
  - Sub-Alternative 5-3: Retain Vehicular Access to SR 193
- Alternative 6: Affordable Housing Alternative
- Alternative 7: Sierra College Boulevard Alternative

This section provides a description of these alternatives, and presents specific environmental impacts, which may be different from those of the proposed project. The alternatives were qualitatively analyzed for impacts to each of the environmental resources (with the exception of traffic, which was quantitatively analyzed); however, only the impacts that differ from those of the proposed project are discussed below.

Alternative 7, Sierra College Boulevard, was analyzed to a similar level of detail as the proposed project (a quantitative level of analysis) and, therefore, includes a discussion of both existing setting, environmental impacts, and mitigation measures, if any. For this reason, the format of the Alternative 7 discussion differs from the qualitative discussions for Alternatives 1 through 6.

Where an alternative is predicted to cause a significant impact not attributed to the proposed project, the impact and mitigation are discussed. In accordance with CEQA guidelines, measures are proposed that would avoid, minimize, rectify, reduce, or compensate for predicted impacts. The feasibility and effectiveness of mitigation measures are discussed.

Section 16.1.3 of this EIR summarizes the alternatives analysis and identifies the environmentally superior alternative, as required by CEQA (*CEQA Guidelines §15126(d)*).

### **16.1.2.1 Alternative 1 – No Project Alternative**

This alternative is a “no action” alternative. Under this alternative, the proposed project would not be developed. The basic landform at the site would remain in its present condition, and a residential community would not be constructed. In addition, other adverse and beneficial effects associated with the proposed project would not occur.

Environmental impacts associated with the No Project Alternative are qualitatively analyzed below.

#### **Land Use**

The No Project Alternative would produce no changes on the project site, eliminating any impacts from the proposed development discussed in this report. Since the project site is designated as Rural Residential (1-10 acre minimum) and the current owner desires to develop the property, it is unlikely that the project site would remain undeveloped in perpetuity. An interim use of the property for grazing would generate no direct or significant environmental impacts on land use, but neither would it achieve the project objectives nor those specified in Appendix C of the General Plan. Alternative 1 is preferred over the proposed project.

#### **Population and Housing**

The No Project Alternative would eliminate any impacts from proposed development discussed in this report. Continued use of the property for grazing would not generate any significant environmental impacts on population, employment and housing. Although the No Project Alternative would reduce the number of potential housing units anticipated in the County’s Housing Element from 101,308 to 99,358 (refer to Table 5-5), this 1.9 percent reduction is not considered significant since the County would still be able to meet its housing needs. The proposed project is preferable to the No Project Alternative, however, since it provides housing and employment opportunities which are appropriate for this site and in accordance with the Development Standards of Appendix C.

#### **Public Services and Utilities**

**Water:** The No Project Alternative would have no impact on water supply, treatment, or conveyance systems. Improvements to the PCWA raw water canal system would not be funded by the Applicant. Therefore, the No Project Alternative would be preferred over the proposed project.

**Wastewater:** The No Project Alternative would have no impact on or demand for wastewater conveyance and treatment systems. Under this alternative, the benefit of the Applicant’s participation in construction of off-site sewer and wastewater treatment plant improvements would be foregone; however, this loss would be balanced by the decreased demand for sewer and wastewater treatment services. Therefore, it would be preferred over the proposed project.

**Electricity/Gas/Energy:** No impacts from development would occur; therefore, the No Project Alternative would be preferred.

**Parks and Recreation:** No impacts from park and recreation facilities would occur. None of the beneficial impacts would occur. Opportunities for linkages would not occur. No additional recreation opportunities would be available to nearby residents. No stress on existing park and recreation facilities in the vicinity would occur. Overall, the No Project Alternative would be preferred.

**Other Community/County Services:** Absent the proposed project, there would be no new fire station to serve this area and no provision of additional EMT services. There would be no impacts on other community services without development of the proposed project, however. Therefore, the No Project Alternative would be preferred.

### **Traffic and Circulation (Quantitative Analysis)**

The traffic impacts of the No Project Alternative were evaluated under the same three development scenarios as the proposed project: Existing Plus Alternative 1, 2010 General Plan Plus Alternative 1 and Buildout of Project Vicinity Plus Alternative 1. Existing plus Alternative 1 represents existing conditions which are outlined in Section 7.1. Currently all of the roadways and intersections in the vicinity of the project site meet the County's level of service policy.

The 2010 General Plan scenario reflects the land uses evaluated for the EIR in the Placer County General Plan Update, except for the project site. The General Plan Update EIR assumed that about 1,600 single-family dwelling units would be developed on the Bickford Ranch site by 2010, which represented a portion of the development allowed under the General Plan. Under Alternative 1, no development was assumed on the project site. Therefore, Alternative 1 reflects no additional trips generated by the project site.

Table 7-11 shows the roadway segment level of service analysis (based on daily traffic volumes) for 2010 General Plan Plus Alternative I conditions. Under these conditions, I-80 would operate at LOS "F" conditions west of Sierra College Boulevard and east of SR 193, assuming no improvements (i.e., 6 lanes) on these sections of I-80. The recommended mitigation measures identified in the General Plan EIR were construction of an eastbound truck climbing lane from Penryn to SR 49 and construction of HOV lanes from the Sacramento County line to Sierra College Boulevard. These measures would allow I-80 to operate at LOS "E" conditions under Alternative 1.

Table 7-12 shows the intersection level of service analysis for 2010 General Plan Plus Alternative 1 conditions. This analysis indicates the following:

- The intersection of SR 193 and SR 65 would operate at LOS "E" conditions during the a.m. peak hour and LOS "F" conditions during the p.m. peak hour. The City of Lincoln does not plan improvements to this intersection, but intends to solve the anticipated congestion along SR 65 through central Lincoln by constructing the SR 65 Bypass. The analysis of the 2010 General Plan conditions did not include the bypass around Lincoln, which is planned to be constructed by 2010, but does not yet have funding. With construction of the Lincoln Bypass, this intersection would likely operate at an acceptable level of service under Alternative 1.
- The eastbound and westbound stop-sign controlled approaches of Del Mar Avenue would operate at LOS "D" conditions during the a.m. and p.m. peak hours. A traffic signal would not be warranted at this intersection under 2010 General Plan Plus Alternative 1 conditions. Due to the low volumes on these approaches, this impact is considered to be less than significant.

No development on the project site was also assumed for Buildout of Project Vicinity Plus Alternative 1 conditions. Table 7-13 presents the roadway segment level of service analysis for this scenario. This analysis indicates the following:

- Sierra College Boulevard would operate at LOS “E” conditions from Taylor Road to Granite Drive. Widening this section to 6 lanes would provide an acceptable level of service on this section of roadway.
- I-80 would operate at LOS “F” conditions west of Sierra College Boulevard and east of SR 193, assuming no improvements (i.e., 6 lanes) on these sections of I-80. The recommended mitigation measures identified in the General Plan EIR were construction of an eastbound truck climbing lane from Penryn to SR 49 and construction of HOV lanes from the Sacramento County line to Sierra College Boulevard. These measures would allow I-80 to operate at LOS “E” conditions under Alternative 1.

Table 7-14 shows the intersection level of service analysis for Buildout of Project Vicinity Plus Alternative 1. This analysis indicates the following:

- The intersection of SR 193 and SR 65 would operate at LOS “F” conditions during the p.m. peak hour. The City of Lincoln does not plan improvements to this intersection, but intends to solve the anticipated congestion along SR 65 through central Lincoln by constructing the SR 65 Bypass. The analysis of the Buildout of Project Vicinity scenario did not include the bypass around Lincoln, which is planned to be constructed by 2010, but does not yet have funding. With construction of the Lincoln Bypass, this intersection should operate at acceptable levels of service.
- The eastbound and westbound stop-sign controlled approaches on Del Mar Avenue would operate at LOS “F” during the a.m. and p.m. peak hours. A traffic signal would not be warranted at this intersection under Buildout of Project Vicinity Plus Project conditions. Due to the low volumes of traffic on these approaches, this impact is considered less than significant.
- The intersection of English Colony and Taylor Road would operate at LOS “D” during the p.m. peak hour. This intersection was assumed to be signalized under the Buildout of Project Vicinity scenario based on a planning level signal warrant analysis. The addition of right-turn lanes on both of the Taylor Road approaches to this intersection would provide an acceptable level of service at this intersection.

Alternative 1 would not have any impacts on transit service or bikeways. Alternative 1 would be preferred over the proposed project.

### **Air Quality**

No construction activity would occur with the No Project Alternative, thus no construction emissions would be generated. Existing land uses at the project site do not generate vehicle trips, thus current emissions associated with the site are negligible. With the No Project Alternative, no change in current emissions would be anticipated. Because this alternative would generate no pollutant emissions, the No Project Alternative is preferred over the proposed project.

### **Noise**

No construction activity would occur with the No Project Alternative, thus no construction noise would be generated. Traffic volumes associated with the No Project Alternative would be negligible, and thus would not contribute to the ambient noise environment. Because this alternative would neither increase noise levels in the study area nor introduce noise-sensitive receptors to noise-impacted areas, the No Project Alternative is preferred over the proposed project.

### **Soils, Geology, and Seismicity**

The types of soil, geology, and seismicity impacts associated with the No Project Alternative are anticipated to be less than those of the proposed project. Since the basic landform of the site would remain in its present condition and no structures or infrastructure would be built, the construction and operational impacts associated with the soils, geologic and seismic conditions of the proposed project would cause the No Project Alternative to be preferred over the proposed project.

### **Hazardous Waste/Materials**

The types of hazardous waste impacts associated with the No Project Alternative are anticipated to be less than the proposed project. Since no increased use or storage of hazardous materials would occur as a result of the No Project Alternative, the hazardous waste impacts associated with construction and operation of the proposed project would cause the No Project Alternative to be preferred over the proposed project.

### **Hydrology and Water Quality**

There would be no additional impacts to groundwater supply and quality if there were no development. The benefit of proposed canal improvements would be foregone, allowing some loss of water through continued canal leakage. Surface water quality would be unchanged as long as land use and existing drainage patterns remain the same under the No Project Alternative. The No Project Alternative would be preferred to the proposed project.

### **Biology**

No changes to biological resources would occur as a result of this alternative and all impacts of the No Project Alternative would be less than those identified for the proposed project. Therefore, this alternative is preferred over the proposed project.

### **Cultural Resources**

As the development would not be constructed with this alternative, no impacts to cultural or paleontological resources would occur. Therefore, this alternative is preferred over the proposed project.

### **Visual Quality**

The No Project Alternative would result in no identifiable aesthetic impacts to the project site. The No Project Alternative would be preferred over the proposed project.



### 16.1.2.2 Alternative 2 – Reduced Density Alternative

In this alternative, the total number of units would be reduced and the majority of the amenities would be retained, although at a somewhat reduced level. The land uses for Alternative 2 are shown on Figure 16-1 and are summarized in Table 16-1 below:

**Table 16-1**  
**Land Uses – Alternative 2**

Key	Land Use	Typical Lot Size	Units ±	Acres
RR	Rural Residential	2.0 - 10 ac.	142	797.5
CR	Country Residential	1/3 - 1.9 ac.	322	442.5
LDR	Low Density Residential	7,000 to 15,000 sq. ft.	36	13.5
MLD	Medium Low Density	6,000 to 10,000 sq. ft.	341	110
MD	Medium Density	5,000 to 7,400 sq. ft.	584	119.5
<b>Subtotal</b>			<b>1,425</b>	<b>1483.0</b>
VC	Village Commercial			7.3
NP	Neighborhood Parks			20.0
OSC	Open Space Corridors			19.0
WTP	Wastewater Treatment Plant			40.0
GC	18-Hole Golf Course			313.5
RC	Recreation Center			6.0
DR	Driving Range			31.0
GMF	Golf Maintenance Facility			3.5
FS	Fire Station			1.7
P/R	Park/Ride			0.5
	Roadways, ROW			39.1
<b>Subtotal</b>				<b>481.6</b>
<b>TOTAL</b>			<b>1,425</b>	<b>1,964.6</b>

The higher density land uses would be located on top of the ridge where slopes do not exceed 10 percent. The age-restricted concept in this location would be retained, and the number of units in the Heritage Ridge area would be reduced from 947 units to 925 units. The Ridges and Meadows areas would be developed with 500 units, which is approximately one-half of the units identified in the proposed project for these areas. This would result in more rural estate, rural residential and country residential lots and fewer low density residential and medium density lots, particularly within the Ridges and Meadows areas. Less development would occur than permitted by the General Plan. A population of approximately 2,965 people is estimated for this alternative: 1.8 for age-restricted housing; 2.6 for balance of units.

Because some areas in this alternative would be converted from open space to large residential lots, the CC&Rs for the development would include a restriction on the removal of oak trees on private property. This alternative would result in 468 acres less open space.

The golf course, driving range, and clubhouse in Heritage Ridge would be retained. The neighborhood park at the eastern end of the project would be 12 acres in size. The community park would change to



rural residential land uses, with a small (eight-acre) neighborhood park located south of the village commercial center.

Bickford Ranch Road would be constructed substantially as described in the proposed project, except that some lots would have frontage on Bickford Ranch Road. Driveway access to these residential lots would be permitted. Equestrian and pedestrian trails would not be constructed. A Class II bike lane would be included on some of the roadways. Other streets would be downsized to accommodate the reduced number of units. Clark Tunnel Road would remain closed both north and southeast of the project site, as for the proposed project.

An on-site wastewater treatment system would be constructed in the Meadows area, since this alternative would make construction of a sewer pipeline and the transporting of wastewater to Lincoln economically infeasible. The project geology/soil conditions will not support the use of individual septic systems because a major portion of the project area is not able to support leach fields. Therefore, the choices for on-site systems would be limited to a STEP system, a package plant or an aerated treatment cell system. A STEP system or pressure sewer system is comprised of individual septic tanks that pump the effluent to either aeration ponds or to a package treatment pond and then ultimately to disposal by spraying or evaporation ponds. A package plant is essentially a complete treatment plant in a compact package that is delivered as a unit. The size would be determined by the level of treatment required and the flow. Disposal is by spray on land (requiring 150 acres) or evaporation ponds (requiring 20 acres). A package plant would take approximately 10 acres with setbacks. An aerated treatment cell system discharges raw wastewater to an aerated treatment cell pond for biological treatment after which the water is pumped to a storage pond for holding until use or disposal by spray irrigation on the golf course or evaporation pond. This system would require approximately 20 acres.

Water would be provided via PCWA, stubbed in from the south as for the proposed project. Other amenities included in the proposed project would remain: a village commercial center, a park and ride lot, and a fire station site. In this alternative, however, the Applicant would not propose the construction or equipping of the station, although the County could require participation as a condition of approval.

Environmental impacts associated with Alternative 2 are qualitatively analyzed below.

## **Land Use**

While Alternative 2 would result in a 27 percent decrease in the number of residential units, when compared with the proposed project, the total acreage devoted to residential development would increase by approximately 42 percent to a total of approximately 75 percent of developed acreage on the project site. A significant portion of the land would shift from designated natural open space/open space corridors to large-lot Rural Residential (2-10 acres) uses. Additional land would be reassigned from Community Park land and Village Recreation to Low-Density Residential lots, a larger driving range, and an on-site wastewater treatment system. Much of the common open space and park land, which serves to buffer the project from adjacent land uses and Sierra College Boulevard, would be incorporated into rural residential lots. Land use compatibility would generally be the same as with the proposed project. This alternative features several of the components in Appendix C's Design Standards, but does not utilize design features which are essential to achieve the desired urban form (i.e., high-density residential uses within the village core, and pedestrian-oriented design.) Additionally, it does not meet the project objectives of preserving more natural open space for active and passive recreation, making the proposed project preferred over this alternative.

### Population and Housing

Alternative 2 would result in 31 percent fewer residents because the overall housing supply would be reduced by 525 units compared to the proposed project. Although the Reduced Density Alternative would decrease the number of potential housing units anticipated in the County's Housing Element from 101,308 to 100,783 (refer to Table 5-5), this 0.5 percent reduction is not considered significant since the County would still be able to meet its housing needs. While the number of age-restricted units would be reduced, senior housing would constitute a higher percentage of total units—65 percent of the units would be age-restricted under this alternative as compared with 49 percent under the proposed project. Fewer units would not significantly affect housing affordability with regard to low-income households, since no "affordable" units are included in either this alternative or the proposed project.

However, the median home price would probably be higher under the proposed project since there would be substantially more lots ranging from 0.3 to 10 acres. Employment-generating uses would not be significantly altered by this alternative. Although a few jobs could be eliminated by the exclusion of a Village Recreation center, this loss could be partially offset by the job(s) required for operation and maintenance of the on-site wastewater treatment system. No preference between Alternative 2 and the proposed project is suggested since similar conclusions can be drawn regarding affordable housing and employment under both development scenarios.

### Public Services and Utilities

**Water:** Under Alternative 2, demand for treated domestic water would be reduced by about 25 percent to approximately 1.7 mgd. On- and off-site domestic water conveyance systems would need to be essentially the same as those for the proposed project. The demand for raw water from the Caperton and Antelope Canals would be the same as the proposed project, and the associated impacts and mitigation measures would be similar. Groundwater usage would also be essentially the same as the proposed project. The decrease in demand for domestic water would make Alternative 2 slightly preferable to the proposed project with respect to water supply.

**Wastewater:** Because wastewater would be treated on-site, there would be no need to construct off-site sewer pipelines, and impacts associated with off-site sewer lines would not exist. There would be no demand for treatment capacity at the LWWT or RWWTP, and the need for increased off-site treatment capacity might therefore be reduced or delayed.

An on-site sewage conveyance system similar to that described for the proposed project would still be needed to transport wastewater to the treatment plant, located in the Meadows Area. Selection of the treatment process would depend primarily on an economic analysis of capital and operation and maintenance costs. Regardless of the treatment process employed, treated effluent would be disposed of on-site by a combination of infiltration and evaporation using spray fields and/or evaporation ponds. Some of the effluent could be reclaimed for irrigation, depending on economic viability. Design and operation of the on-site plant would be regulated by an NPDES Permit and Waste Discharge Requirements (WDRs) issued by the Central Valley RWQCB. The plant would be managed by a public agency or its designee. The WDRs would specify treated effluent quality limits that the RWQCB deems protective of water quality, and would specify design, operational, and monitoring requirements to ensure protection of water quality. Some accumulation of inorganic waste products (such as salts and metals) would inevitably occur in soil within effluent disposal areas. Although on-site "package" treatment systems are consistent with Placer County General Plan Policy 4.D.7, the primary concern would be whether the Homeowners Association would remain financially stable to ensure adequate operating budget to cover contingencies such as plant "upset" conditions or other unforeseen problems requiring large capital expenditures. Additionally, the stringent effluent quality standards typically associated with

reclaimed water irrigation would require a level of treatment that is difficult to reliably accomplish at the small “package plant” level. In this regard, the proposed project would be preferable to Alternative 2.

**Electricity/Gas/Energy:** Reduction of the total number of developed lots by 525 will decrease the demand for electricity, gas and energy and result in an overall decreased impact to the resources and distribution systems. Alternative 2, therefore, is preferred to the proposed project.

**Parks and Recreation:** Public recreation facilities provided in the reduced density alternative are limited to open space corridors and the Neighborhood Park. Potentially private facilities include the golf course, driving range and Village Recreation Center. With an estimated population of 2,965 residents, compliance with Placer County policies would require 14.8 acres each of passive recreation and improved parkland. The reduced density alternative would achieve this requirement with 19.0 acres of passive recreation (open space corridors) and 20 acres of public park facilities (two Neighborhood Parks). Increased demand for existing public parks and recreational facilities by new residents, especially nearby facilities in the City of Lincoln, would be potentially significant due to the limited facilities available within the project. Equestrian and pedestrian trail systems would not be developed, although bicycle lanes may be included on some of the roadways. The County could, however, require equestrian and pedestrian trails as a condition of approval. The beneficial impact of improvements to bicycle and equestrian trail systems of the proposed project might not be fully realized in the reduced density alternative. There is no preference between the proposed project and Alternative 2.

**Other Community/County Services:** Reducing the number of units and residents would decrease the demand for County and community services. Due to the decreased impact on County and community services, Alternative 2 is preferred over the proposed project.

## Traffic and Circulation

Table 16-2 summarizes the trip generation of Alternative 2. This alternative would generate about 12,300 daily vehicle trips on an average weekday (note that internal trip “ends” are not double counted). About 10,170 of these daily vehicle trips would travel outside the project site. This alternative would add about 2,330 fewer daily vehicle trips to roadways outside the project site compared to the proposed project.

Tables 16-3, 16-4 and 16-5 show roadway segment level of service analyses (based on daily traffic volumes) for Existing Plus Alternative 2, 2010 General Plan Plus Alternative 2 and Buildout of Project Vicinity Plus Alternative 2, respectively. The distribution of project traffic under each of these development scenarios is shown in Table 7-7. The roadway segment impacts under Alternative 2 would differ from the impacts of the proposed project in the following ways:

- Under Existing Plus Alternative 2 conditions, Sierra College Boulevard would operate at acceptable levels of service between Bickford Ranch Road and Granite Drive. The proposed project under this scenario would cause this section of Sierra College Boulevard to operate at an unacceptable level of service.
- Under Buildout of Project Vicinity Plus Alternative 2 conditions, the roadway segment level of service indicates that Sierra College Boulevard would operate at LOS “C” conditions between English Colony Way and Taylor Road. The proposed project under this scenario indicates LOS “D” conditions for this roadway section.

Tables 16-6, 16-7, and 16-8 show the intersection level of service analyses for the Existing Plus Alternative 2, 2010 General Plan Plus Alternative 2 and Buildout of Project Vicinity Plus Alternative 2, respectively.

**Table 16-2**  
**Estimated Trip Generation**  
**Alternative 2 – Reduced Density**

Land Use	Units	Daily		A.M. Peak Hour				P.M. Peak Hour			
				In		Out		In		Out	
		Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips
Residential The Ridge	453 DU	9.57	4,335	0.19	86	0.56	254	0.64	290	0.36	163
The Meadows	47 DU	9.57	450	0.19	9	0.56	26	0.64	30	0.36	17
Heritage Ridge	925 DU	3.68	3,404	0.14	131	0.13	120	0.13	119	0.14	133
Subtotal	1,425 DU		8,189		226		400		439		313
% Internal Trips			26%		12%		9%		27%		41%
Internal Trips			2,129		37		27		130		117
External Trips			6,060		199		363		309		197
Commercial Village Center	7.3 Acres	855	6,242	12.70	93	7.46	54	40.00	292	40.00	292
% Internal Trips			34%		40%		50%		45%		40%
Internal Trips			2,129		37		27		130		117
External Trips			4,112		55		27		162		175
<b>Total External Trips</b>			<b>10,172</b>		<b>255</b>		<b>390</b>		<b>471</b>		<b>372</b>

Source: DKS Associates, 1999.

**Table 16-3  
Roadway Segment Levels of Service  
Existing Plus Alternative 2**

Roadway	Segment	No. of Lanes	No Project		Alternative 2	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	2	4,880	A	7,320	A
	Twelve Bridges to Bickford Ranch Rd	2	5,600	A	7,540	A
	Bickford Ranch Rd to English Colony	2	5,600	A	13,330	C
	English Colony to King Road	2	5,780	A	12,800	C
	King Road to Taylor Road	2	6,100	A	12,610	C
	Taylor Road to Granite	2	10,200	A	15,490	D
	Granite to I-80	2	14,770	D	19,960	F
SR 193	SR 65 to Lincoln City Limits	2	6,700	A	7,510	A
	Lincoln City Limits to Sierra College	2	6,500	A	8,230	A
	Sierra College to Clark Tunnel	2	5,000	A	5,710	A
	Clark Tunnel to Newcastle	2	4,400	A	5,110	A
I-80	West of Sierra College Blvd	6	87,000	D	91,040	D
	East of SR 193	6	80,000	D	81,010	D
Lower Ranch Rd.	East of Sierra College	2	-		840	A
Bickford Ranch Rd.	East of Sierra College	2	-		9,330	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	240	A	240	A
English Colony Rd	Sierra College to Clark Tunnel	2	870	A	1,580	A
	Clark Tunnel to Taylor	2	2,530	A	3,240	A

Source: DKS Associates, 1999.

**Table 16-4**  
**Roadway Segment Levels of Service**  
**2010 General Plan Plus Alternative 2**

Roadway	Segment	No. of Lanes	No Project		Alternative 2	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	12,690	A	15,740	A
	Twelve Bridges to Bickford Ranch Rd	4	15,220	A	18,170	A
	Bickford Ranch Rd to English Colony	4	15,220	A	21,730	B
	English Colony to King Road	4	13,990	A	19,280	A
	King Road to Taylor Road	4	15,970	A	20,650	A
	Taylor Road to Granite	4	29,200	D	33,160	E
	Granite to I-80	6	30,970	A	34,530	B
SR 193	SR 65 to Lincoln City Limits	4	12,120	A	13,440	A
	Lincoln City Limits to Sierra College	4	19,550	A	22,100	B
	Sierra College to Clark Tunnel	2	13,430	C	13,940	C
	Clark Tunnel to Newcastle	2	9,300	A	9,800	A
I-80	West of Sierra College Blvd	6	110,000	F	112,830	F
	East of SR 193	6	100,000	F	100,610	F
Lower Ranch Rd.	East of Sierra College	2	-	A	990	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	9,180	A
12 Bridges Rd.	West of Sierra College	4	2,560	A	3,170	A
Clover Valley Rd.	West of Sierra College	2	2,820	A	3,530	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	460	A	460	A
English Colony Rd	Sierra College to Clark Tunnel	2	3,200	A	3,710	A
	Clark Tunnel to Taylor	2	4,770	A	5,280	A

Source: DKS Associates, 1999.



**Table 16-5  
Roadway Segment Levels of Service  
Buildout of Project Vicinity Plus Alternative 2**

Roadway	Segment	No. of Lanes	No Project		Alternative 2	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	14,600	A	17,240	A
	Twelve Bridges to Bickford Ranch Rd	4	27,360	C	30,790	D
	Bickford Ranch Rd to English Colony	4	27,360	C	33,460	E
	English Colony to King Road	4	23,780	B	28,260	C
	King Road to Taylor Road	4	23,800	B	28,080	C
	Taylor Road to Granite	4	35,190	E	38,850	F
	Granite to I-80	6	34,710	B	38,240	C
SR 193	SR 65 to Lincoln City Limits	4	12,290	A	13,410	A
	Lincoln City Limits to Sierra College	4	21,870	B	24,110	B
	Sierra College to Clark Tunnel	2	14,600	D	15,010	D
	Clark Tunnel to Newcastle	2	9,930	A	10,330	A
I-80	West of Sierra College Blvd	6	111,420	F	114,040	F
	East of SR 193	6	100,700	F	101,210	F
Lower Ranch Road	East of Sierra College	2	-	A	890	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	9,280	A
12 Bridges Rd.	West of Sierra College	4	15,710	A	17,140	A
Clover Valley Rd.	West of Sierra College	2	6,640	A	7,450	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	460	A	460	A
English Colony Rd	Sierra College to Clark Tunnel	2	5,430	A	5,840	A
	Clark Tunnel to Taylor	2	6,480	A	6,890	A

Source: DKS Associates, 1999.

**Table 16-6**  
**Intersection Levels of Service, Existing Plus Alternative 2**

Intersection		Control Type	No Project				Plus Alternative 2			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
<b>SR 193</b>	<b>SR 65</b>	Signal	<b>A</b>	0.507 V/C	<b>A</b>	0.580 V/C	<b>A</b>	0.521 V/C	<b>B</b>	0.607 V/C
<b>Sierra College</b>	<b>SR 193</b>	Stop	<b>A</b>	2.1 sec	<b>A</b>	3.1 sec	<b>A</b>	3.1 sec	<b>A</b>	4.1 sec
	<i>NB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.8 sec	<b>C</b>	8.7 sec	<b>C</b>	8.9 sec
	<i>SB Left</i>		<b>B</b>	6.6 sec	<b>A</b>	3.1 sec	<b>B</b>	7.2 sec	<b>B</b>	7.7 sec
<b>SR 193</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	<i>NB Approach</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	<i>WB Left</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Lower Ranch Road</b>	Stop	<b>N/A</b>		<b>N/A</b>		<b>A</b>	0.4	<b>A</b>	0.4
	<i>SB Left</i>						<b>A</b>	2.7	<b>A</b>	3.4
	<i>WB Approach</i>						<b>A</b>	4.8	<b>B</b>	5.1
<b>Sierra College</b>	<b>Twelve Bridges Drive</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec	<b>A</b>	2.6 sec	<b>A</b>	3.5 sec	<b>A</b>	2.8 sec
	<i>EB Approach</i>		<b>A</b>	4.0 sec	<b>A</b>	4.3 sec	<b>A</b>	4.3 sec	<b>B</b>	5.0 sec
<b>Sierra College</b>	<b>Bickford Ranch Road</b>	Signal	<b>N/A</b>		<b>N/A</b>		<b>A</b>	0.451 V/C	<b>A</b>	0.467 V/C
<b>Sierra College</b>	<b>English Colony Way</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec	<b>A</b>	0.4 sec
	<i>SB Left</i>		<b>A</b>	2.5 sec	<b>A</b>	3.0 sec	<b>A</b>	3.1 sec	<b>A</b>	4.4 sec
	<i>WB Approach</i>		<b>A</b>	4.4 sec	<b>A</b>	4.9 sec	<b>B</b>	5.5 sec	<b>B</b>	6.8 sec
<b>Sierra College</b>	<b>Clover Valley Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Del Mar Avenue</b>	Stop	<b>A</b>	0.8 sec	<b>A</b>	0.6 sec	<b>A</b>	0.9 sec	<b>A</b>	0.7 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec		sec	<b>B</b>	4.3 sec		sec
	<i>SB Left</i>				<b>A</b>	3.0			<b>A</b>	4.3
	<i>EB Approach</i>		<b>B</b>	6.9 sec	<b>B</b>	6.6 sec	<b>C</b>	12.6 sec	<b>C</b>	14.3 sec
	<i>WB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.6 sec	<b>C</b>	13.8 sec	<b>C</b>	14.3 sec
<b>Sierra College</b>	<b>King Road</b>	Stop	<b>A</b>	0.9 sec	<b>A</b>	1.2 sec	<b>A</b>	0.9 sec	<b>A</b>	1.4 sec
	<i>NB Left</i>		<b>A</b>	2.8 sec	<b>A</b>	2.6 sec	<b>A</b>	3.7 sec	<b>A</b>	3.4 sec
	<i>SB Left</i>		<b>A</b>	2.6 sec	<b>A</b>	3.1 sec	<b>A</b>	3.1 sec	<b>A</b>	4.5 sec
	<i>EB Approach</i>		<b>B</b>	5.2 sec	<b>B</b>	7.4 sec	<b>B</b>	8.8 sec	<b>C</b>	16.8 sec
	<i>WB Approach</i>		<b>A</b>	4.8 sec	<b>A</b>	5.0 sec	<b>B</b>	6.9 sec	<b>B</b>	8.4 sec
<b>Sierra College</b>	<b>Taylor Road</b>	Signal	<b>A</b>	0.443 V/C	<b>A</b>	0.489 V/C	<b>A</b>	0.578 V/C	<b>B</b>	0.663 V/C
<b>Sierra College</b>	<b>Granite Drive</b>	Signal	<b>A</b>	0.472 V/C	<b>B</b>	0.681 V/C	<b>B</b>	0.607 V/C	<b>D</b>	0.849 V/C
<b>Sierra College</b>	<b>I-80 WB Ramps</b>	Signal	<b>C</b>	0.753 V/C	<b>C</b>	0.798 V/C	<b>D</b>	0.848 V/C	<b>E</b>	0.972 V/C
<b>Sierra College</b>	<b>I-80 EB Ramps</b>	Signal	<b>C</b>	0.762 V/C	<b>D</b>	0.881 V/C	<b>E</b>	0.911 V/C	<b>F</b>	1.047 V/C
<b>English Colony Way</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.6 sec	<b>A</b>	0.5 sec	<b>A</b>	0.6 sec	<b>A</b>	0.4 sec
	<i>SB Approach</i>		<b>A</b>	4.6 sec	<b>A</b>	4.4 sec	<b>A</b>	4.9 sec	<b>A</b>	4.8 sec
	<i>EB Left</i>		<b>A</b>	2.4 sec	<b>A</b>	2.5 sec	<b>A</b>	2.5 sec	<b>A</b>	2.5 sec
<b>English Colony Way</b>	<b>Taylor Road</b>	Stop	<b>B</b>	6.4 sec	<b>D</b>	11.6 sec	<b>B</b>	7.1 sec	<b>C</b>	12.3 sec

Source: DKS Associates, 1999.

**Table 16-7**  
**Intersection Levels of Service, 2010 General Plan Plus Alternative 2**

Intersection		Control Type	No Project				Plus Alternative 2			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.948 V/C	F	1.158 V/C	E	0.975 V/C	F	1.187 V/C
Sierra College	SR 193	Signal	B	0.645 V/C	C	0.722 V/C	B	0.696 V/C	C	0.775 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 sec
	NB Approach		A	3.5 sec	A	0.0 sec	A	3.6 sec	A	0.0 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.8 sec	A	0.0 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.4 sec	A	0.4 sec
	SB Left						A	4.6 sec	B	5.2 sec
	WB left						D	25.3 sec	D	28.8 sec
Sierra College	Twelve Bridges Drive	Signal	A	0.404 V/C	A	0.381 V/C	A	0.442 V/C	A	0.437 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		A	0.429 V/C	A	0.420 V/C
Sierra College	English Colony Way	Signal	A	0.380 V/C	A	0.364 V/C	A	0.442 V/C	A	0.474 V/C
Sierra College	Clover Valley Road	Signal	A	0.300 V/C	A	0.252 V/C	A	0.384 V/C	A	0.361 V/C
Sierra College	Del Mar Avenue	Stop	A	1.5 sec	A	0.9 sec	A	2.6 sec	A	1.7 sec
	NB Left		A	4.9 sec		sec	B	6.3 sec		sec
	SB Left		A	4.8 sec	A	4.5 sec	B	5.7 sec	B	6.1 sec
	EB Approach		D	25.0 sec	D	23.4 sec	F	46.9 sec	F	53.8 sec
	WB Approach		E	30.0 sec	D	23.4 sec	F	63.3 sec	F	48.3 sec
Sierra College	King Road	Signal	A	0.404 V/C	A	0.443 V/C	A	0.468 V/C	A	0.550 V/C
Sierra College	Taylor Road	Signal	D	0.880 V/C	D	0.878 V/C	E	0.936 V/C	E	0.931 V/C
Sierra College	Granite Drive	Signal	B	0.628 V/C	C	0.743 V/C	B	0.664 V/C	C	0.798 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.745 V/C	C	0.733 V/C	C	0.777 V/C	C	0.786 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.634 V/C	B	0.619 V/C	B	0.643 V/C	B	0.676 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.7 sec	A	0.5 sec	A	0.7 sec	A	0.5 sec
	SB Approach		B	6.0 sec	B	5.8 sec	B	6.2 sec	B	6.1 sec
	EB Left		A	3.0 sec	A	2.6 sec	A	3.0 sec	A	2.7 sec
English Colony Way	Taylor Road	Signal	B	0.670 V/C	C	0.788 V/C	B	0.691 V/C	D	0.801 V/C

Source: DKS Associates, 1999.

**Table 16-8**  
**Intersection Levels of Service, Buildout of Project Vicinity Plus Alternative 2**

Intersection		Control Type	No Project				Plus Alternative 2			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.991 V/C	F	1.189 V/C	F	1.012 V/C	F	1.216 V/C
SR 193	Ferrari Ranch Road	Signal	B	0.646 V/C	C	0.797 V/C	B	0.676 V/C	D	0.833 V/C
Sierra College	SR 193	Signal	D	0.897 V/C	E	0.902 V/C	C	0.751 V/C	D	0.816 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 sec
	NB Approach		B	9.9 sec	C	11.0 sec	C	10.2 sec	C	11.6 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	0.0 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.4 sec	A	0.3 sec
	SB Left						B	5.1 sec	A	5.1 sec
	WB left						D	29.3 sec	E	32.3 sec
Sierra College	Twelve Bridges Drive	Signal	C	0.722 V/C	C	0.786 V/C	C	0.767 V/C	D	0.855 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		A	0.583 V/C	B	0.672 V/C
Sierra College	English Colony Way	Signal	A	0.516 V/C	A	0.591 V/C	A	0.573 V/C	B	0.694 V/C
Sierra College	Clover Valley Road	Signal	A	0.588 V/C	A	0.469 V/C	B	0.667 V/C	A	0.575 V/C
Sierra College	Del Mar Avenue	Stop	C	11.1 sec	A	2.8 sec	D	29.7 sec	C	11.0 sec
	NB Left		B	9.6 sec		sec	C	12.1 sec		sec
	SB Left		B	6.9 sec	B	8.9 sec	B	8.0 sec	C	11.7 sec
	EB Approach		F	115.0 sec	F	112.8 sec	F	>180 sec	F	>180 sec
	WB Approach		F	>180 sec	F	108.0 sec	F	>180 sec	F	>180 sec
Sierra College	King Road	Signal	A	0.565 V/C	C	0.710 V/C	B	0.625 V/C	D	0.810 V/C
Sierra College	Taylor Road	Signal	E	0.990 V/C	E	0.928 V/C	F	1.041 V/C	E	0.992 V/C
Sierra College	Granite Drive	Signal	B	0.682 V/C	D	0.805 V/C	C	0.731 V/C	D	0.856 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.792 V/C	D	0.818 V/C	D	0.821 V/C	D	0.873 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.696 V/C	C	0.736 V/C	C	0.704 V/C	D	0.788 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.6 sec	A	0.4 sec	A	0.6 sec	A	0.4 sec
	SB Approach		B	7.3 sec	B	7.7 sec	B	7.5 sec	B	7.6 sec
	EB Left		A	3.1 sec	A	3.1 sec	A	3.1 sec	A	3.1 sec
English Colony Way	Taylor Road	Signal	C	0.750 V/C	D	0.801 V/C	C	0.767 V/C	D	0.811 V/C

Source: DKS Associates, 1999.

The intersection impacts under Alternative 2 would differ from the impacts of the proposed project in the following ways:

- Under Existing Plus Alternative 2 conditions, the intersection of Sierra College Boulevard and Granite Drive would operate at LOS “D” conditions, which is acceptable under the County’s policies, since it is within one-half mile of a state highway. The proposed project under this scenario would cause this intersection to operate at level of service “E.”
- Under the 2010 General Plan and Buildout of Project Vicinity scenarios, Alternative 2 would have marginally better peak hour operations at key intersections than the proposed project, but would require the same intersection mitigation measures.

Alternative 2 would have about the same impacts on transit services and bikeways as the proposed project. Alternative 2 would be preferred over the proposed project.

### **Air Quality**

Alternative 2 would entail slightly less construction and less grading than the proposed project, hence fugitive dust caused by earthmoving equipment and ozone precursor and particulate emissions from construction-related vehicles would be less than for the proposed project.

Due to the reduced number of units associated with this alternative, fewer vehicle trips would be generated by Alternative 2. This would result in a corresponding decrease in emissions generated by vehicular traffic. The reduced density of the Ridges and Meadows areas would lead to fewer residences within convenient walking or bicycling distance of commercial establishments. The net effect of this Alternative, however, would be an emissions decrease compared to the proposed project Alternative. The lower traffic volumes associated with this alternative would lead to lower carbon monoxide concentrations along affected roadways. Because Alternative 2 would generate approximately 25 percent less emissions than the proposed project, Alternative 2 would be preferred over the proposed project.

### **Noise**

Construction-generated noise for Alternative 2 would be less than for the proposed project because fewer residential units would need to be constructed. In addition, noise levels in the Bickford Ranch community would in general be lower than with the proposed project because Alternative 2 would entail lower traffic volumes onsite and a lower population on the site, hence fewer noise generating activities would occur. Off-site traffic noise impacts would also be less with Alternative 2, since lower traffic volumes associated with this alternative would lead to lower noise levels along affected roadways. Based on potential noise effects, Alternative 2 would be preferred over the proposed project.

### **Soils, Geology, and Seismicity**

Alternative 2 would involve slightly less construction and soil disturbance than the proposed project. As a result, there would be proportionately less potential soil erosion, topographic alteration and slope instability due to grading activities. Alternative 2 would entail fewer dwelling units, thus the potential for differential settlement under structures and foundation instability would be reduced. Therefore Alternative 2 would be preferred over the proposed project.

### **Hazardous Waste/Materials**

Alternative 2 would involve slightly less construction activities and a lower population, and therefore somewhat less use of hazardous materials during and after construction. Alternative 2 would be slightly preferred to the proposed project.

## Hydrology and Water Quality

Reducing the total number of developed lots by 525 would reduce the impacts of project grading and the corresponding amount of impervious surface. The increased potential for impacts resulting from operation of on-site effluent disposal systems would be mitigated by operational controls imposed by the WDRs. Potential impacts from the golf course and on-site septic systems would remain the same. Due to the reduced number of residential units, runoff water quality can be expected to be slightly better than that predicted for the proposed project. Other potential sources of impacts to surface water and groundwater quality (i.e., the golf course and on-site septic systems) would be essentially the same as the proposed project. Overall there is no clear preference between Alternative 2 and the proposed project.

## Biology

This alternative could result in greater construction phase impacts on oaks and other protected trees and special-status plant habitat than the proposed project, because of the lack of designated natural open space area. Implementation of CC&Rs may reduce the level of this impact. Construction impacts on riparian vegetation along Clover Valley Creek and other drainages would not likely differ from the proposed project. Impacts on wetlands and other waters of the United States would be greater than the proposed project, because of construction of a wastewater treatment system in the Meadows community. Construction of the wastewater treatment system would result in the fill of additional wetland acreage within wetland swales in the northern part of the Meadows community. Additional impacts on wetlands in the Meadows community could occur if construction is necessary for a pipeline to transport treated wastewater to the golf course for irrigation use. The extent of this impact would depend on the pipeline route. Implementation of this alternative would result in impacts similar to those identified for the proposed project on common wildlife species; raptors; special-status wildlife species, including vernal pool fairy shrimp, VELB, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, and Cooper's hawk.

This alternative could result in greater operation phase impacts on oaks and other protected trees and special-status plant habitat than the proposed project. Implementation of CC&Rs may reduce the level of this impact. Operation phase impacts on riparian vegetation along Clover Valley Creek and other drainages would not likely differ from the proposed project. During the operation phase of the wastewater treatment system, disposal of biologically treated wastewater by spray irrigation could adversely affect the water quality of golf course runoff into project site streams, including Clover Valley Creek. Operation impacts on wildlife and special-status wildlife would be similar to those identified for the proposed project.

Implementation of the mitigation measures identified in Chapter 13 would reduce most impacts to a less than significant level, with the exception of the oak tree impacts, which would remain significant and unavoidable. However, potential impacts on water quality from the spray irrigation runoff would require additional mitigation to be reduced to a less than significant level. Measures should include implementation of permit conditions that would be required for the operation of the wastewater treatment plant and wastewater discharge. The wastewater treatment plant would be regulated through the NPDES permitting process, which is mandated under the federal Clean Water Act. As part of this permitting process, the Central Valley Regional Water Quality Control Board would impose limitations on the waste discharge, including implementation of provisions of Title 22, Division 4, Chapter 3 of the California Administrative Code. Title 22 criteria include limitations and requirements affecting the water application; treatment methods; monitoring and analysis; and design, operation, maintenance, and reliability of facilities. The regulatory restrictions on waste discharge would reduce potential impacts on water quality of Clover Valley Creek to a less than significant level.

Alternative 2 would result in greater impacts to oaks, oak woodland habitat, special-status plant habitat, and wetlands than the proposed project. In addition, potential impacts to water quality from spray irrigation runoff would require additional mitigation not needed for the proposed project. For these reasons, the proposed project is preferred over Alternative 2.

### **Cultural Resources**

Although the number of dwellings is reduced in this scenario currently designed, all of the important cultural resources potentially impacted by the proposed project could also be impacted with this alternative. With the transfer of site BR-02 from Rural Residential to Wastewater Treatment Plant with this alternative, in addition to direct impacts. Native American concerns may arise. Furthermore, as Natural Open Space (N.O.S.) in the proposed project is converted to building lots with this alternative, site DCN-29 (the only important site in N.O.S.) could also be impacted with the Reduced Density Alternative. Similarly, the three “isolated” milling stations situated in proposed N.O.S. with the proposed project would be located within building lots with Alternative 2. As such, the impacts to cultural resources increase with this particular alternative.

Impacts to paleontological resources would increase with this scenario as the higher density development would be placed atop the ridge system where the Mehrten lahars predominate. Increased construction within this particular geologic unit increases the potential for encountering, and thus impacting, paleontological resources.

The proposed project is preferred over Alternative 2.

### **Visual Quality**

Similar to the proposed project, the implementation of Alternative 2 would result in unavoidable changes to the rural landscape character of the project site. Although Alternative 2 would result in lower overall density of development than the proposed project, a total of 1,483 acres (75 percent) would be used for residential development, rather than the 1,039 (53 percent) acres for residential development in the proposed project. The increased development would result in 470 acres less parks and natural open space, and increased visibility to proposed development. In addition, an industrial facility (wastewater treatment plant) would be constructed at the intersection of SR 193 and Sierra College Boulevard. Above-ground facilities associated with the wastewater treatment plant would be visible from portions of SR 193, Sierra College Boulevard, and adjacent rural residences. Increased visibility to proposed homes would result from the development of substantially more of the project site than specified in the proposed project.

Due to the overall increase in percentage of the project site to be developed, this alternative would likely include development along ridgelines, and would be in conflict with Placer County General Plan policies. The proposed project would be preferred over Alternative 2.

#### **16.1.2.3 Alternative 3 – Conventional Housing Alternative**

In this alternative, the project would be composed entirely of conventional units, and the age-restricted component would not be constructed. The land uses for Alternative 3 are shown on Figure 16-2 and are summarized in Table 16-9 below.

Alternative 3 has 1,425 housing units, the same number of housing units as Alternative 2. However, the majority of the density has been shifted from the Heritage Ridge area to the Ridges and Meadows areas. Minimum lot sizes in Heritage Ridge will be increased to 10,000 square feet, reducing the number of units, and the senior housing component eliminated. The number of Country Residential and Low

Density Residential lots in the Ridges and Meadows areas will increase. A population of approximately 3,705 people is estimated for this alternative.

A 22-acre equestrian park and the 14-acre neighborhood park on the eastern end of the property would be included. Some amenities included in the proposed project would remain, but at a reduced level: a village commercial center, a park and ride lot, and a fire station site. However in this alternative, the Applicant would not construct or equip the fire station facility, although the County could require participation as a condition of approval. Many amenities, including the golf course, driving range and clubhouse, would not be economically feasible.

The on-site wastewater treatment system would be the same as Alternative 2. Spray irrigation, however, would take place in natural open space areas rather than on the golf course (150 acres).

**Table 16-9**  
**Land Uses – Alternative 3**

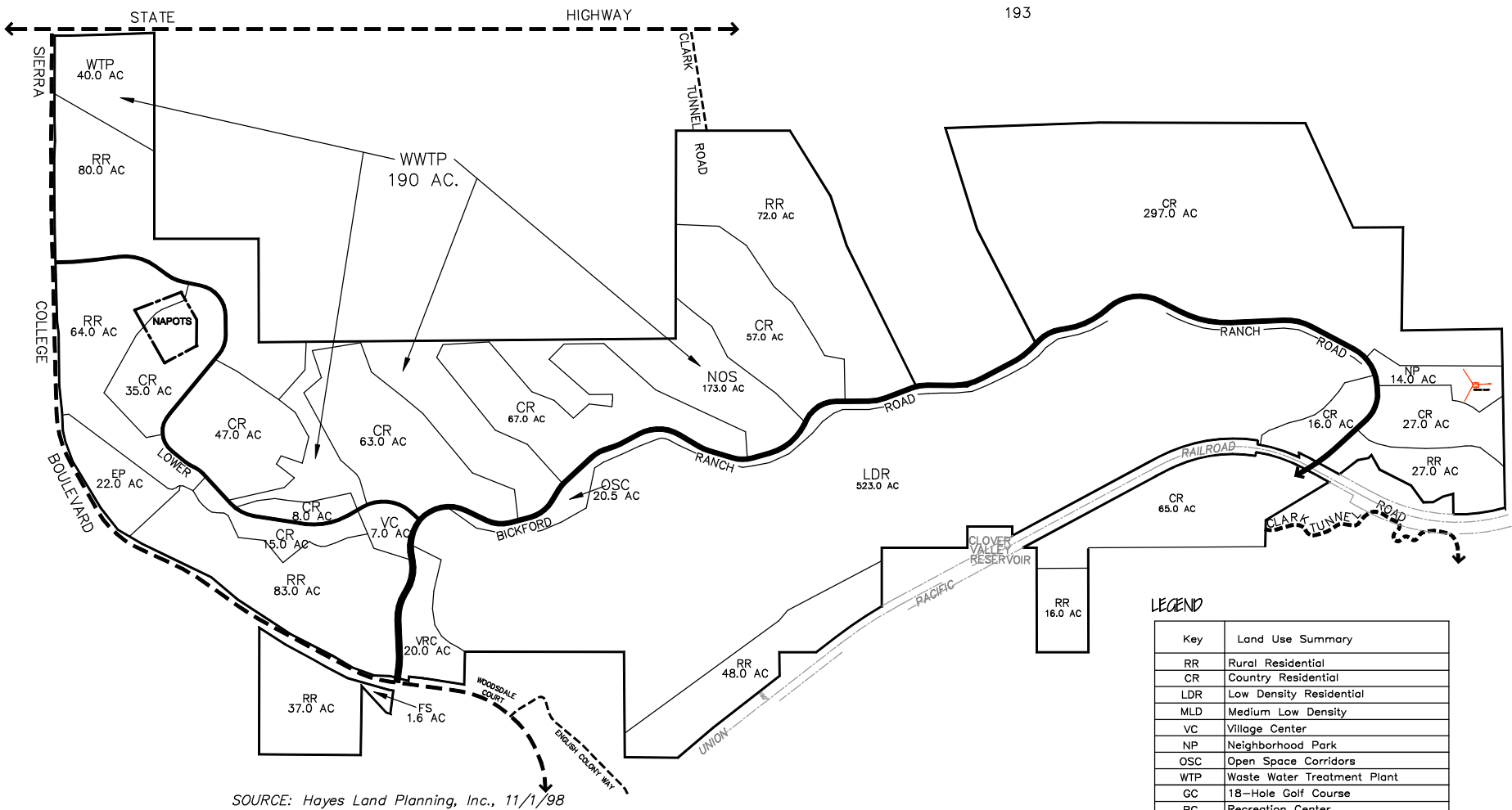
Key	Land Use	Typical Lot Size	Units ±	Acres
RR	Rural Residential	2.0 - 10 ac.	83	443
CR	Country Residential	0.5 - 1.9 ac.	595	685
LDR	Low Density Residential	10,000 to 15,000 sq. ft.	747	523
	Subtotal		1,425	1651.0
VC	Village Commercial			7.0
VRC	Village Recreation Center			20.0
EP	Equestrian Park			22.0
NP	Neighborhood Park			14.0
OSC	Open Space Corridors			20.3
WTP	Wastewater Treatment Plant			190.0
FS	Fire Station			1.6
P/R	Park/Ride			0.5
	Roadways, ROW			38.2
	Subtotal			313.6
	TOTAL		1,425	1,964.6

Environmental impacts associated with Alternative 3 are qualitatively analyzed below.

## Land Use

Alternative 3 would result in 27 percent fewer residential units than the proposed project. However, the total acreage designated for residential development would increase by approximately 59 percent. A significant portion of the land would shift from natural open space to Country Residential (0.5-1.9 acres) and Low-Density Residential (10,000-15,000 square feet) development. The on-site wastewater treatment facility would replace the currently-approved wholesale native plant nursery and would retain 150 acres of the natural open space for spray irrigation. Land uses would shift from two proposed parks, golf course, driving range and clubhouse to additional Village Recreation Center area and an equestrian park. Although the golf course is eliminated under this alternative, ample buffer areas created by large lot

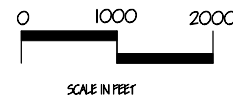
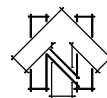




#### LEGEND

Key	Land Use Summary
RR	Rural Residential
CR	Country Residential
LDR	Low Density Residential
MLD	Medium Low Density
VC	Village Center
NP	Neighborhood Park
OSC	Open Space Corridors
WTP	Waste Water Treatment Plant
GC	18-Hole Golf Course
RC	Recreation Center
DR	Driving Range
GMF	Golf Maintenance Facility
FS	Fire Station
PR	Park-N-Ride
EP	Equestrian Park

**BICKFORD**  
RANCH



## ALTERNATIVE 3 CONVENTIONAL HOUSING

1999

Job No. 21305-002-038

Bickford Ranch Specific Plan EIR

Placer County, California



FIGURE 16-2

design and use of natural open space would adequately separate the development from surrounding agricultural and rural residential parcels. Alternative 3 conforms, in part, with the Design Standards outlined in Appendix C, but it does not incorporate design features such as mixed use, pedestrian-oriented villages, high-density residential uses within a village core, and community parks linked by greenbelts and pedestrian/bicycle pathways. Additionally, this alternative fails to meet the project objectives of conserving open space and offering recreational amenities—specifically the community park and a golf course for senior adults. Therefore, the proposed project is preferable to Alternative 3.

## Population and Housing

Since the overall housing supply would be 525 units less than under the proposed project and the age-restricted housing component would be eliminated, Alternative 3 would result in 14 percent fewer residents. The reduction in total units and elimination of senior housing units would not significantly affect housing affordability with regard to low-income households, since no affordable units are included in either this alternative or the proposed project. However, elimination of the smallest lot sizes (less than 10,000 square feet) would increase the project's average home price. The opportunities for job creation with this alternative would be lessened by approximately 28 percent due to the elimination of the golf course, driving range and clubhouse and would result in a slight reduction in the amount of Village Commercial land. The loss could be partially offset, however, through creation of job(s) for operation and maintenance of the on-site wastewater treatment system and jobs associated with the larger Village Recreation site. Alternative 3 is not preferred over the proposed project, however, because it fails to meet the special housing needs of seniors and limits the variety of housing types and prices.

## Public Services and Utilities

**Water:** Under Alternative 3, the demand for treated domestic water would be roughly the same as the proposed project. Although Alternative 3 would reduce the on-site population by about 15 percent, there would be a roughly commensurate increase in the residential area using potable water for landscape irrigation. On- and off-site domestic water conveyance systems would need to be essentially the same as those for the proposed project. Raw water from Caperton and Antelope canals would not be needed for irrigation, and improvements to the canals would not be constructed. Groundwater usage from domestic wells would also be essentially the same as the proposed project. Overall, there is no preference between Alternative 3 and the proposed project.

**Wastewater:** Because wastewater would be treated on-site, there would be no need to construct off-site sewer pipelines, and impacts associated with off-site sewer lines would not exist. There would be no demand for treatment capacity at the LWWTP or RWWTP, and the need for increased off-site treatment capacity might therefore be reduced or delayed.

An on-site sewage conveyance system similar to that described for the proposed project and Alternative 2 would still be needed to transport wastewater to the treatment plant, located in the Meadows Area. Selection of the treatment process would depend primarily on an economic analysis of capital and operation and maintenance costs. Regardless of the treatment process employed, treated effluent would be disposed of on-site by a combination of infiltration and evaporation using spray fields and/or evaporation ponds. Some of the effluent could be reclaimed for irrigation, depending on economic viability. Design and operation of the on-site plant would be regulated by an NPDES Permit and WDRs issued by the Central Valley RWQCB. The plant would be managed by a public agency or its designee. The WDRs would specify treated effluent quality limits that the RWQCB deems protective of water quality, and would specify design, operational, and monitoring requirements to ensure protection of water quality. Some accumulation of inorganic waste products (such as salts and metals) would inevitably occur in soil within effluent disposal areas. Although on-site "package" treatment systems are consistent with Placer County General Plan Policy 4.D.7, the primary concern would be whether the Homeowners Association would remain financially stable to ensure adequate operating budget to cover contingencies such as plant "upset" conditions or other unforeseen problems requiring large capital expenditures.

Additionally, the stringent effluent quality standards typically associated with reclaimed water irrigation would require a level of treatment that is difficult to reliably accomplish at the small “package plant” level. In this regard, the proposed project would be preferable to Alternative 3.

**Electricity/Gas/Energy:** Reducing the total units by 525 will decrease the demand for electricity and natural gas, resulting in an overall decreased impact to resources and distribution systems. Alternative 3 is preferred over the proposed project.

**Parks and Recreation:** The potential impacts of the conventional housing alternative fall between those of the proposed project and Alternative 2. This alternative includes an additional 150 acres of open space for spray irrigation associated with wastewater treatment; however, the golf course and driving range would not be provided. Improved parkland would consist of the Neighborhood Park and Village Recreation Center (as in Alternative 2) and a 22-acre equestrian center.

According to Placer County policy, Alternative 3 would require 18.5 acres each of passive recreation and improved parkland for the estimated population of 3,705 new residents. Alternative 3 provides an adequate supply of park and recreation facilities with 170.3 acres of natural open space (20.3 acres of open space corridors and 150 acres of open space associated with waste water treatment) and 37 acres of public park facilities. Increased demand for existing public parks and recreational facilities by new residents would be potentially significant due to the limited facilities available within the project. Because Alternative 3 does not include an age-restricted housing component, the lack of ball fields may become more important, causing additional demand on nearby facilities, especially within the City of Lincoln. Equestrian and pedestrian trail systems would not be developed, although bicycle lanes may be included on some of the roadways. The beneficial impact of improvements to bicycle and equestrian trail systems of the proposed project would not be fully realized in this alternative. The proposed project is preferred over Alternative 3.

**Other Community/County Services:** Reducing the number of units and residents will decrease the demand for community and county services. Therefore, Alternative 3 would be preferred over the proposed project.

### **Traffic and Circulation (Quantitative Analysis)**

Table 16-10 summarizes the trip generation of Alternative 3. This alternative would generate about 16,330 daily vehicle trips on an average weekday (note that internal trip “ends” are not double counted). About 12,790 of these daily vehicle trips would travel outside the project site. This alternative would add about 300 more daily vehicle trips to roadways outside the project site compared to the proposed project.

Tables 16-11, 16-12, and 16-13 show roadway segment level of service analyses (based on daily traffic volumes) for Existing Plus Alternative 3, 2010 General Plan Plus Alternative 3 and Buildout of Project Vicinity Plus Alternative 3, respectively. This distribution of project traffic under each of these development scenarios is shown in Table 7-7. The roadway segment impacts under Alternative 3 would be the same as those under the proposed project for all three development scenarios.

Tables 16-14, 16-15, and 16-16 show the intersection level of service analyses for the Existing Plus Alternative 3, 2010 General Plan Plus Alternative 3 and Buildout of Project Vicinity Plus Alternative 3, respectively. The intersection impacts under Alternative 3 would differ from the impacts of the proposed project in the following way:

**Table 16-10**  
**Estimated Trip Generation**  
**Alternative 3 – Conventional Housing**

Land Use		Units	Daily		A.M. Peak Hour				P.M. Peak Hour			
					In		Out		In		Out	
			Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips
Residential	The Ridge	1,323 DU	9.57	12,661	0.19	251	0.56	741	0.64	847	0.36	476
	The Meadows	102 DU	9.57	976	0.19	19	0.56	57	0.64	65	0.36	37
	Subtotal	1,425 DU		13,637		271		798		912		513
	% Internal Trips			26%		12%		9%		27%		41%
	Internal Trips			3,546		72		32		210		246
	External Trips			10,092		238		726		702		267
Commercial	Village Center	7.3 Acres	855	6,242	12.70	93	7.46	54	40.00	292	40.00	292
	% Internal Trips			57%		77%		60%		72%		84%
	Internal Trips			3,546		72		32		210		246
	External Trips			2,696		21		22		82		46
<b>Total External Trips</b>				<b>12,787</b>		<b>259</b>		<b>748</b>		<b>783</b>		<b>313</b>

Source: DKS Associates, 1999.

**Table 16-11**  
**Roadway Segment Levels of Service**  
**Existing Plus Alternative 3**

Roadway	Segment	No. of Lanes	No Project		Alternative 3	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	2	4,880	A	7,950	A
	Twelve Bridges to Bickford Ranch Rd	2	5,600	A	8,130	A
	Bickford Ranch Rd to English Colony	2	5,600	A	15,320	D
	English Colony to King Road	2	5,780	A	14,600	D
	King Road to Taylor Road	2	6,100	A	14,280	C
	Taylor Road to Granite	2	10,200	A	16,850	E
	Granite to I-80	2	14,770	D	21,290	F
SR 193	SR 65 to Lincoln City Limits	2	6,700	A	7,720	A
	Lincoln City Limits to Sierra College	2	6,500	A	8,670	A
	Sierra College to Clark Tunnel	2	5,000	A	5,900	A
	Clark Tunnel to Newcastle	2	4,400	A	5,300	A
I-80	West of Sierra College Blvd	6	87,000	D	92,390	D
	East of SR 193	6	80,000	D	81,350	D
Lower Ranch Rd.	East of Sierra College	2	-		1,260	A
Bickford Ranch Rd.	East of Sierra College	2	-		11,530	B
Clark Tunnel Rd.	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	240	A	240	A
English Colony Rd.	Sierra College to Clark Tunnel	2	870	A	1,770	A
	Clark Tunnel to Taylor	2	2,530	A	3,420	A

Source: DKS Associates, 1999.

**Table 16-12  
Roadway Segment Levels of Service  
2010 General Plan Plus Alternative 3**

Roadway	Segment	No. of Lanes	No Project		Alternative 3	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	12,690	A	16,520	A
	Twelve Bridges to Bickford Ranch Rd	4	15,220	A	18,970	A
	Bickford Ranch Rd to English Colony	4	15,220	A	23,410	B
	English Colony to King Road	4	13,990	A	20,640	A
	King Road to Taylor Road	4	15,970	A	21,850	B
	Taylor Road to Granite	4	29,200	D	34,180	E
	Granite to I-80	6	30,970	A	35,960	B
SR 193	SR 65 to Lincoln City Limits	4	12,120	A	13,780	A
	Lincoln City Limits to Sierra College	4	19,550	A	22,750	B
	Sierra College to Clark Tunnel	2	13,430	C	14,070	C
	Clark Tunnel to Newcastle	2	9,300	A	9,940	A
I-80	West of Sierra College Blvd	6	110,000	F	113,770	F
	East of SR 193	6	100,000	F	100,810	F
Lower Ranch Rd.	East of Sierra College	2	-	A	1,450	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	11,340	B
12 Bridges Rd.	West of Sierra College	4	2,560	A	3,330	A
Clover Valley Rd.	West of Sierra College	2	2,820	A	3,720	A
Clark Tunnel Rd.	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	460	A	460	A
English Colony Rd.	Sierra College to Clark Tunnel	2	3,200	A	3,840	A
	Clark Tunnel to Taylor	2	4,770	A	5,410	A

Source: DKS Associates, 1999.

**Table 16-13**  
**Roadway Segment Levels of Service**  
**Buildout of Project Vicinity Plus Alternative 3**

Roadway	Segment	No. of Lanes	No Project		Alternative 3	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	14,600	A	17,920	A
	Twelve Bridges to Bickford Ranch Rd	4	27,360	C	31,700	D
	Bickford Ranch Rd to English Colony	4	27,360	C	35,030	E
	English Colony to King Road	4	23,780	B	29,920	D
	King Road to Taylor Road	4	23,800	B	29,170	D
	Taylor Road to Granite	4	35,190	E	39,790	F
	Granite to I-80	6	34,710	B	38,800	C
SR 193	SR 65 to Lincoln City Limits	4	12,290	A	13,690	A
	Lincoln City Limits to Sierra College	4	21,870	B	24,680	B
	Sierra College to Clark Tunnel	2	14,600	D	15,110	D
	Clark Tunnel to Newcastle	2	9,930	A	10,440	A
I-80	West of Sierra College Blvd	6	111,420	F	114,920	F
	East of SR 193	6	100,700	F	101,370	F
Lower Ranch Road	East of Sierra College	2	-	A	1,330	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	11,460	B
12 Bridges Rd.	West of Sierra College	4	15,710	A	17,500	A
Clover Valley Rd.	West of Sierra College	2	6,640	A	7,660	A
Clark Tunnel Rd.	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	460	A	460	A
English Colony Rd.	Sierra College to Clark Tunnel	2	5,430	A	5,940	A
	Clark Tunnel to Taylor	2	6,480	A	6,990	A

Source: DKS Associates, 1999.

**Table 16-14**  
**Intersection Levels of Service, Existing Plus Alternative 3**

Intersection		Control Type	No Project				Plus Alternative 3			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
<b>SR 193</b>	<b>SR 65</b>	Signal	<b>A</b>	0.507 V/C	<b>A</b>	0.580 V/C	<b>A</b>	0.521 V/C	<b>B</b>	0.624 V/C
<b>Sierra College</b>	<b>SR 193</b>	Stop	<b>A</b>	2.1 sec	<b>A</b>	3.1 sec	<b>A</b>	4.1 sec	<b>A</b>	4.1 sec
	<i>NB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.8 sec	<b>C</b>	10.2 sec	<b>C</b>	9.4 sec
	<i>SB Left</i>		<b>B</b>	6.6 sec	<b>A</b>	3.1 sec	<b>B</b>	7.5 sec	<b>B</b>	8.0 sec
<b>SR 193</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	<i>NB Approach</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	<i>WB Left</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Lower Ranch Road</b>	Stop	<b>N/A</b>		<b>N/A</b>		<b>A</b>	0.7	<b>A</b>	0.5
	<i>SB Left</i>						<b>A</b>	2.9	<b>A</b>	3.5
	<i>WB Approach</i>						<b>B</b>	5.5	<b>B</b>	6.2
<b>Sierra College</b>	<b>Twelve Bridges Drive</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec	<b>A</b>	2.6 sec	<b>A</b>	3.5 sec	<b>A</b>	3.0 sec
	<i>EB Approach</i>		<b>A</b>	4.0 sec	<b>A</b>	4.3 sec	<b>A</b>	4.4 sec	<b>B</b>	5.3 sec
<b>Sierra College</b>	<b>Bickford Ranch Road</b>	Signal	<b>N/A</b>		<b>N/A</b>		<b>B</b>	0.633 V/C	<b>A</b>	0.621 V/C
<b>Sierra College</b>	<b>English Colony Way</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec	<b>A</b>	0.6 sec
	<i>SB Left</i>		<b>A</b>	2.5 sec	<b>A</b>	3.0 sec	<b>A</b>	3.2 sec	<b>B</b>	5.7 sec
	<i>WB Approach</i>		<b>A</b>	4.4 sec	<b>A</b>	4.9 sec	<b>B</b>	6.7 sec	<b>B</b>	8.8 sec
<b>Sierra College</b>	<b>Clover Valley Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Del Mar Avenue</b>	Stop	<b>A</b>	0.8 sec	<b>A</b>	0.6 sec	<b>A</b>	1.0 sec	<b>A</b>	0.7 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec		sec	<b>B</b>	5.7 sec		sec
	<i>SB Left</i>				<b>A</b>	3.0			<b>B</b>	5.5
	<i>EB Approach</i>		<b>B</b>	6.9 sec	<b>B</b>	6.6 sec	<b>C</b>	17.7 sec	<b>C</b>	18.2 sec
	<i>WB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.6 sec	<b>D</b>	20.3 sec	<b>C</b>	18.3 sec
<b>Sierra College</b>	<b>King Road</b>	Stop	<b>A</b>	0.9 sec	<b>A</b>	1.2 sec	<b>A</b>	0.9 sec	<b>A</b>	1.7 sec
	<i>NB Left</i>		<b>A</b>	2.8 sec	<b>A</b>	2.6 sec	<b>A</b>	4.8 sec	<b>A</b>	3.3 sec
	<i>SB Left</i>		<b>A</b>	2.6 sec	<b>A</b>	3.1 sec	<b>A</b>	3.2 sec	<b>B</b>	5.7 sec
	<i>EB Approach</i>		<b>B</b>	5.2 sec	<b>B</b>	7.4 sec	<b>C</b>	12.2 sec	<b>D</b>	22.3 sec
	<i>WB Approach</i>		<b>A</b>	4.8 sec	<b>A</b>	5.0 sec	<b>B</b>	8.9 sec	<b>C</b>	10.8 sec
<b>Sierra College</b>	<b>Taylor Road</b>	Signal	<b>A</b>	0.443 V/C	<b>A</b>	0.489 V/C	<b>C</b>	0.702 V/C	<b>C</b>	0.770 V/C
<b>Sierra College</b>	<b>Granite Drive</b>	Signal	<b>A</b>	0.472 V/C	<b>B</b>	0.681 V/C	<b>C</b>	0.740 V/C	<b>E</b>	0.978 V/C
<b>Sierra College</b>	<b>I-80 WB Ramps</b>	Signal	<b>C</b>	0.753 V/C	<b>C</b>	0.798 V/C	<b>E</b>	0.939 V/C	<b>F</b>	1.089 V/C
<b>Sierra College</b>	<b>I-80 EB Ramps</b>	Signal	<b>C</b>	0.762 V/C	<b>D</b>	0.881 V/C	<b>E</b>	0.940 V/C	<b>F</b>	1.134 V/C
<b>English Colony Way</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.6 sec	<b>A</b>	0.5 sec	<b>A</b>	0.6 sec	<b>A</b>	0.4 sec
	<i>SB Approach</i>		<b>A</b>	4.6 sec	<b>A</b>	4.4 sec	<b>B</b>	5.0 sec	<b>A</b>	4.9 sec
	<i>EB Left</i>		<b>A</b>	2.4 sec	<b>A</b>	2.5 sec	<b>A</b>	2.5 sec	<b>A</b>	2.6 sec
<b>English Colony Way</b>	<b>Taylor Road</b>	Stop	<b>B</b>	6.4 sec	<b>D</b>	11.6 sec	<b>B</b>	8.2 sec	<b>C</b>	11.3 sec

Source: DKS Associates, 1999.



**Table 16-15**  
**Intersection Levels of Service, 2010 General Plan Plus Alternative 3**

Intersection		Control Type	No Project				Plus Alternative 3			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.948 V/C	F	1.158 V/C	E	0.985 V/C	F	1.208 V/C
Sierra College	SR 193	Signal	B	0.645 V/C	C	0.722 V/C	C	0.731 V/C	C	0.760 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 sec
	NB Approach		A	3.5 sec	A	0.0 sec	A	3.6 sec	A	0.0 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	0.0 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.9 sec	A	0.6 sec
	SB Left						B	5.1 sec	B	5.4 sec
	WB left						E	31.9 sec	E	35.8 sec
Sierra College	Twelve Bridges Drive	Signal	A	0.404 V/C	A	0.381 V/C	A	0.461 V/C	A	0.474 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		A	0.516 V/C	A	0.503 V/C
Sierra College	English Colony Way	Signal	A	0.380 V/C	A	0.364 V/C	A	0.487 V/C	A	0.537 V/C
Sierra College	Clover Valley Road	Signal	A	0.300 V/C	A	0.252 V/C	A	0.449 V/C	A	0.433 V/C
Sierra College	Del Mar Avenue	Stop	A	1.5 sec	A	0.9 sec	A	3.9 sec	A	2.3 sec
	NB Left		A	4.9 sec		sec	B	7.9 sec		sec
	SB Left		A	4.8 sec	A	4.5 sec	B	5.7 sec	B	7.4 sec
	EB Approach		D	25.0 sec	D	23.4 sec	F	67.8 sec	F	76.0 sec
	WB Approach		E	30.0 sec	D	23.4 sec	F	107.6 sec	F	61.5 sec
Sierra College	King Road	Signal	A	0.404 V/C	A	0.443 V/C	A	0.479 V/C	A	0.612 V/C
Sierra College	Taylor Road	Signal	D	0.880 V/C	D	0.878 V/C	E	0.987 V/C	E	0.922 V/C
Sierra College	Granite Drive	Signal	B	0.628 V/C	C	0.743 V/C	B	0.691 V/C	D	0.796 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.745 V/C	C	0.733 V/C	C	0.798 V/C	D	0.825 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.634 V/C	B	0.619 V/C	B	0.652 V/C	B	0.707 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.7 sec	A	0.5 sec	A	0.7 sec	A	0.5 sec
	SB Approach		B	6.0 sec	B	5.8 sec	B	6.3 sec	B	6.3 sec
	EB Left		A	3.0 sec	A	2.6 sec	A	3.0 sec	A	2.7 sec
English Colony Way	Taylor Road	Signal	B	0.670 V/C	C	0.788 V/C	C	0.703 V/C	D	0.799 V/C

Source: DKS Associates, 1999.

**Table 16-16**  
**Intersection Levels of Service, Buildout of Project Vicinity Plus Alternative 3**

Intersection		Control Type	No Project				Plus Alternative 3			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	<b>E</b>	0.991 V/C	<b>F</b>	1.189 V/C	<b>F</b>	1.020 V/C	<b>F</b>	1.234 V/C
SR 193	Ferrari Ranch Road	Signal	<b>B</b>	0.646 V/C	<b>C</b>	0.797 V/C	<b>C</b>	0.703 V/C	<b>D</b>	0.858 V/C
Sierra College	SR 193	Signal	<b>D</b>	0.897 V/C	<b>E</b>	0.902 V/C	<b>C</b>	0.781 V/C	<b>D</b>	0.819 V/C
SR 193	Clark Tunnel Road	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	NB Approach		<b>B</b>	9.9 sec	<b>C</b>	11.0 sec	<b>C</b>	10.4 sec	<b>C</b>	11.7 sec
	WB left		<b>A</b>	2.8 sec	<b>A</b>	0.0 sec	<b>A</b>	2.9 sec	<b>A</b>	0.0 sec
	Lower Ranch Road	Stop	<b>N/A</b>		<b>N/A</b>		<b>A</b>	0.9 sec	<b>A</b>	0.6 sec
	SB Left						<b>B</b>	5.6 sec	<b>A</b>	5.3 sec
	WB left						<b>E</b>	37.2 sec	<b>E</b>	39.9 sec
Sierra College	Twelve Bridges Drive	Signal	<b>C</b>	0.722 V/C	<b>C</b>	0.786 V/C	<b>D</b>	0.802 V/C	<b>D</b>	0.872 V/C
Sierra College	Bickford Ranch Road	Signal	<b>N/A</b>		<b>N/A</b>		<b>B</b>	0.668 V/C	<b>C</b>	0.730 V/C
Sierra College	English Colony Way	Signal	<b>A</b>	0.516 V/C	<b>A</b>	0.591 V/C	<b>B</b>	0.603 V/C	<b>C</b>	0.754 V/C
Sierra College	Clover Valley Road	Signal	<b>A</b>	0.588 V/C	<b>A</b>	0.469 V/C	<b>B</b>	0.728 V/C	<b>B</b>	0.645 V/C
	Del Mar Avenue	Stop	<b>C</b>	11.1 sec	<b>A</b>	2.8 sec	<b>E</b>	44.8 sec	<b>D</b>	20.5 sec
	NB Left		<b>B</b>	9.6 sec		sec	<b>C</b>	14.9 sec		sec
	SB Left		<b>B</b>	6.9 sec	<b>B</b>	8.9 sec	<b>C</b>	8.0 sec	<b>C</b>	14.0 sec
	EB Approach		<b>F</b>	115.0 sec	<b>F</b>	112.8 sec	<b>F</b>	>180 sec	<b>F</b>	>180 sec
	WB Approach		<b>F</b>	>180 sec	<b>F</b>	108.0 sec	<b>F</b>	>180 sec	<b>F</b>	>180 sec
Sierra College	King Road	Signal	<b>A</b>	0.565 V/C	<b>C</b>	0.710 V/C	<b>B</b>	0.669 V/C	<b>D</b>	0.867 V/C
Sierra College	Taylor Road	Signal	<b>E</b>	0.990 V/C	<b>E</b>	0.928 V/C	<b>F</b>	1.088 V/C	<b>F</b>	1.032 V/C
Sierra College	Granite Drive	Signal	<b>B</b>	0.682 V/C	<b>D</b>	0.805 V/C	<b>C</b>	0.772 V/C	<b>D</b>	0.888 V/C
Sierra College	I-80 WB Ramps	Signal	<b>C</b>	0.792 V/C	<b>D</b>	0.818 V/C	<b>D</b>	0.842 V/C	<b>E</b>	0.909 V/C
Sierra College	I-80 EB Ramps	Signal	<b>B</b>	0.696 V/C	<b>C</b>	0.736 V/C	<b>C</b>	0.711 V/C	<b>D</b>	0.817 V/C
	Clark Tunnel Road	Stop	<b>A</b>	0.6 sec	<b>A</b>	0.4 sec	<b>A</b>	0.6 sec	<b>A</b>	0.4 sec
	SB Approach		<b>B</b>	7.3 sec	<b>B</b>	7.7 sec	<b>B</b>	7.6 sec	<b>B</b>	7.7 sec
	EB Left		<b>A</b>	3.1 sec	<b>A</b>	3.1 sec	<b>A</b>	3.1 sec	<b>A</b>	3.1 sec
English Colony Way	Taylor Road	Signal	<b>C</b>	0.750 V/C	<b>D</b>	0.801 V/C	<b>C</b>	0.776 V/C	<b>D</b>	0.809 V/C

Source: DKS Associates, 1999.

- Under Buildout of Project Vicinity Conditions, Alternative 3 would cause the intersection of Sierra College Boulevard and the I-80 westbound ramps to operate at LOS “E” conditions. The proposed project under this scenario would cause this intersection to operate at LOS “D.”

Alternative 3 would have about the same impacts on transit services and bikeways as the proposed project.

The proposed project would be slightly preferred over Alternative 3.

### **Air Quality**

Alternative 3 would entail slightly less construction and grading than the proposed project. Construction emissions associated with Alternative 3 would be less than for the proposed project.

Because Alternative 3 would include conventional housing units in place of restricted age residential units, the number of trips generated by this alternative would represent a substantial increase over vehicle trips generated by the proposed project. This increase in vehicle trips would result in a corresponding increase in vehicular emissions of CO, particulates, and ozone precursors. In addition, in order to accommodate the conventional housing option, lot sizes would be increased in a large portion of the proposed project. High density development is generally more conducive to alternative transportation modes than low density development, thus the reduced density associated with Alternative 3 would be less conducive to bicycling and walking than the proposed project. Additional trips generated by Alternative 3 traffic would also increase vehicle volumes on the roadway network, thereby potentially increasing roadside CO concentrations.

Because Alternative 3 would generate higher emissions than the proposed project, the proposed project would be preferred over Alternative 3.

### **Noise**

Construction-generated noise for Alternative 3 would be less than for the proposed project because fewer residential units would need to be constructed. Operational noise levels associated with Alternative 3 would generally be higher than for the proposed project. Conventional housing typically entails a higher residential activity level than age restricted housing, therefore noise generated by project residents would be lower with the proposed project than with Alternative 3. Because the number of daily vehicle trips generated with Alternative 3 would be higher than with the proposed project, on- and off-site traffic noise levels would be greater with Alternative 3. The proposed project is preferred over Alternative 3 with respect to potential noise impacts.

### **Soils, Geology, and Seismicity**

This alternative would result in impacts similar to the proposed project with respect to potential soil erosion, topographic alteration and slope instability due to grading activities. Alternative 3 would incorporate land spraying on 150 acres of open space to dispose of treated wastewater. Because of the poor capacity of site soils to accept infiltration, this solution may be infeasible. Therefore, the proposed project would be preferred over Alternative 3.

### **Hazardous Waste/Materials**

Alternative 3 would not include a golf course, driving range or clubhouse, therefore there would be less use of agricultural chemicals (fertilizers and pesticides) compared to the proposed project. Because of the

decreased potential for the release of hazardous materials, Alternative 3 would be preferred over the proposed project.

## **Hydrology and Water Quality**

Reducing the total number of developed lots by 525 would reduce the amount of project grading and the corresponding amount of impervious surface, thus increasing groundwater recharge and decreasing groundwater impacts. The increased potential for groundwater impacts resulting from operation of on-site effluent disposal systems would be mitigated by operational controls imposed by the WDRs. There would be no impacts to groundwater quality from the golf course. Other potential sources of impacts to groundwater quality (i.e., on-site septic systems) would be essentially the same as the proposed project. Due to the reduced number of residential units and an increase in the average -lot size, the total impervious area would be less than that for the proposed project. Additionally, there would be no golf course. Runoff water quality can therefore be expected to be better than that predicted for the proposed project. Overall, Alternative 3 is preferable to the proposed project.

## **Biology**

This alternative could result in greater construction phase impacts on oaks and other protected trees and special-status plant habitat than the proposed project, because of the lack of designated natural open space area. Implementation of CC&Rs may reduce the level of this impact. Construction impacts on riparian vegetation along Clover Valley Creek and other drainages would not likely differ from the proposed project. Impacts on wetlands and other waters of the United States would be greater than the proposed project, because of construction of a wastewater treatment system in the Meadows community. Construction of the wastewater treatment system would result in the fill of additional wetland acreage within wetland swales in the northern part of the Meadows community. Additional impacts on wetlands in the Meadows community could occur if construction is necessary for a pipeline to transport treated wastewater to the natural open space areas for spray irrigation. The extent of this impact would depend on the pipeline route. Implementation of this alternative would result in impacts equal to or greater than those of the proposed project for raptors and special-status wildlife species, including vernal pool fairy shrimp, VELB, California red-legged frog, foothill yellow-legged frog, northwestern pond turtle, and Cooper's hawk.

This alternative could result in greater operation phase impacts on oaks and other protected trees and special-status plant habitat than the proposed project. Implementation of CC&Rs may reduce the level of this impact. Operation phase impacts on riparian vegetation along Clover Valley Creek and other drainages would not likely differ from the proposed project. During the operation phase of the wastewater treatment system, disposal of biologically treated wastewater by spray irrigation within natural open space areas could adversely affect the water quality of runoff into project site streams, including intermittent drainages and riparian wetlands (ID-1, ID-4, ID-10, RW-1, and RW-3 shown on Figure 13-2 in Chapter 13). Operation impacts on wildlife and special-status wildlife would be equal to or greater than impacts identified for the proposed project.

Implementation of the mitigation measures identified in Chapter 13 would reduce most impacts to a less than significant level, with the exception of the oak tree impacts, which would remain significant and unavoidable. However, potential impacts on water quality from the spray irrigation runoff would require additional mitigation to be reduced to a less than significant level. Measures discussed under Alternative 2 regarding the regulatory restrictions on waste discharge would reduce potential impacts on water quality of drainages and wetlands to a less than significant level.

Alternative 3 would result in greater impacts to oaks, oak woodland habitat, special-status plant habitat, and wetlands than the proposed project. In addition, potential impacts to water quality from spray irrigation runoff would require additional mitigation than needed for the proposed project. For these reasons, the proposed project is preferred over Alternative 3.

## Cultural Resources

Similar to Alternative 2, all of the important cultural resources impacted by the proposed project could still be impacted with this alternative. Site BR-02 transfers from Rural Residential to Wastewater Treatment Plant with this alternative which, in addition to direct impacts, may result in Native American concerns. Also, as most of the natural open space in the proposed project is converted to building lots with this alternative, Site DCN-29 transfers from being situated in natural open space to a building lot. Similarly, the three “isolated” milling stations situated in proposed natural open space with the proposed project would be located within building lots with Alternative 3. As such, potential impacts to cultural resources increase with Alternative 3.

Impacts to paleontological resources would likely decrease with the Conventional Housing Alternative as the number of residential units would be reduced atop the ridge system where the Mehrten lahars predominate. Decreased construction within this particular geologic unit decreases the potential for encountering paleontological resources. The proposed project is slightly preferred over Alternative 3.

## Visual Quality

The implementation of Alternative 3 would result in unavoidable changes to the rural landscape character of the project site. Alternative 3 is similar to Alternative 2 in that it would result in lower overall density of development than the proposed project, less natural open space, and increased visibility to proposed development. The average lot size is larger than for Alternative 2, but the number of proposed units remains the same (1,425 units). Therefore a greater percentage of the project site would be dedicated to residential development under Alternative 3. Increased visibility to residential structures could occur due to the increase in the percentage of the project site dedicated to residential development.

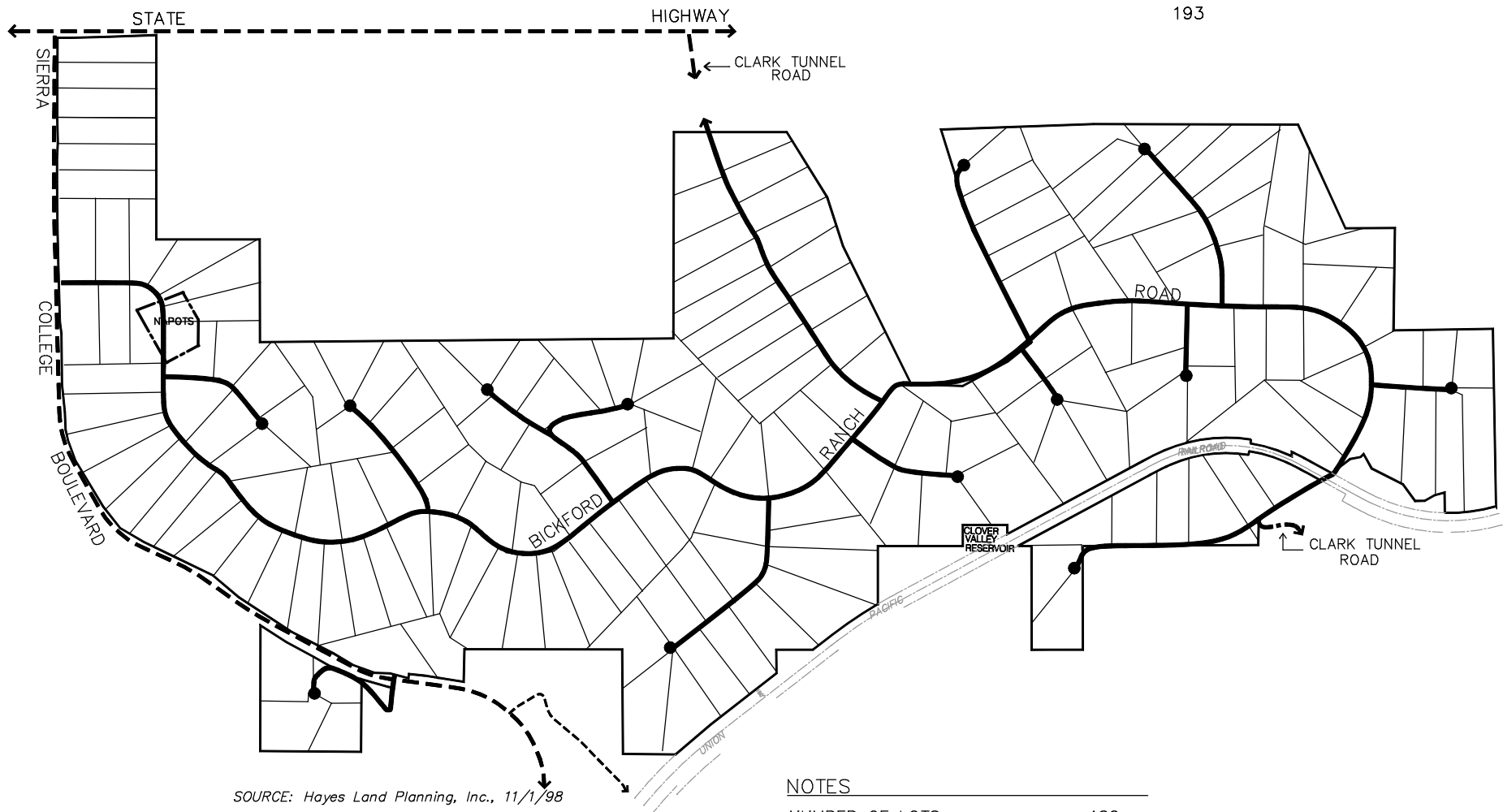
Due to the overall increase in percentage of the project site to be developed, this alternative would likely include development along ridgelines, and would be in conflict with Placer County General Plan policies. The proposed project would be preferred over Alternative 3.

### 16.1.2.4 Alternative 4 – Rural Residential Alternative

In this alternative, the entire site would be developed at the Farm 10-acre minimum zoning level, consistent with applicable residential subdivision ordinances and regulations of Placer County. The amenities identified for the proposed project and for the Reduced Density Alternative (Alternative 2) would not be constructed in Alternative 4. The land uses for Alternative 4 are shown on Figure 16-3 and are summarized in Table 16-17, below:

**Table 16-17**  
**Land Uses – Alternative 4**

Key	Land Use	Typical Lot Size	Units ±	Acres
RE	Rural Estate	10 ac.	182	1,900.6
	Roadways, ROW			64.0
	TOTAL		182	1,964.6

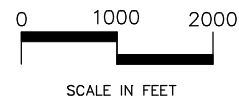
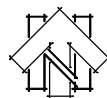


SOURCE: Hayes Land Planning, Inc., 11/1/98

#### NOTES

NUMBER OF LOTS	182
MINIMUM LOT SIZE	10 AC.
ON-SITE ROADS	PUBLIC
ROAD STANDARDS	RURAL MINOR
WATER	WELLS
SEWAGE DISPOSAL	SEPTIC

**BICKFORD**  
RANCH



## ALTERNATIVE 4 RURAL RESIDENTIAL PLAN

1999 Bickford Ranch Specific Plan EIR  
Job No. 21305-002-038 Placer County, California



FIGURE 16-3

A total of 182 rural estate residential units would be constructed, based on the existing Farm 10-acre minimum zoning. The age-restricted (senior) component would be eliminated. A population of approximately 473 people is estimated for this alternative.

Some open space would be preserved by incorporating wetlands and steep sloped areas in protected easements. No trail system or parks would be included in this alternative (in lieu fees would be used to satisfy General Plan parks requirements).

The golf course, driving range, and recreation center would not be constructed. Because the community park would not be constructed, opportunities for equestrians would be eliminated. However, pedestrian and bicycle lanes would probably be constructed.

One main rural road would be constructed, from Sierra College Boulevard (located where Lower Ranch Road is planned in the proposed project) to the currently proposed Bickford Ranch Road. This road would then head east and connect to Clark Tunnel Road. Rural feeder roads to lots would also be constructed. Clark Tunnel Road would remain open to vehicles both north and south of the project. Rural road standards would be maintained throughout the area.

No public sewer or water would be proposed; septic tanks, leach fields, and well systems would serve the rural estate homes and the commercial area. These would all be subject to Placer County standards and permit requirements. No fire station site would be included.

Environmental impacts associated with Alternative 4 are qualitatively analyzed below.

## **Land Use**

With the entire project site designated for Rural Estate development, Alternative 4 would decrease the number of residential units by 82 percent. The land uses under this alternative would shift from higher density residential, commercial and recreational development to Rural Estates (10-acre minimum) only. Land set aside for internal roads and rights-of-way would be 72 percent more than with the proposed project. Of the proposed residential alternatives, Alternative 4 is considered most compatible with adjacent uses due to its conformance with existing densities and land uses in the surrounding area. Both the proposed project and Alternative 4 are consistent with the underlying General Plan designation allowing 195 to 1,950 dwelling units on the project site. The proposed project is generally consistent with Appendix C Design Standards; these standards are not applicable to Alternative 4. With regard to land use, therefore, no preference between the two project scenarios is suggested.

## **Population and Housing**

With the reduction in the number of residential units by 1,768 and elimination of the age-restricted housing component, Alternative 4 would result in 89 percent fewer residents than under the current proposal. Although the Rural Residential Alternative would decrease the number of potential housing units anticipated in the County's Housing Element from 38,214 to 36,446 (refer to Table 5-5), this 4.6 percent reduction is not considered significant since the County would still be able to meet its housing needs. This change in project would not significantly affect housing affordability with regard to low-income households, since no "affordable" units are included in either the alternative or the proposed project. However, the 10-acre parcel sizes would restrict even moderate- and many above moderate-income households from purchasing these lots. The job creation component of the project would be eliminated with this alternative. The proposed project is preferred over Alternative 4 because it would meet the needs of a broader range of social and economic groups, including senior adults, with regard to housing (type and cost) and recreation. Additionally, the proposed project would provide more than 200 permanent job opportunities that would not be created through this alternative.

### Public Services and Utilities

**Water:** Under Alternative 4, there would be no demand for treated domestic water, and no on- or off-site domestic water conveyance systems would be constructed. Additionally, raw water from the Caperton and Antelope Canals would not be needed for irrigation, and improvements to the canals would not be constructed. Reliance on groundwater wells as the sole source of water, however, may not be technically feasible for all parcels, and the impact on groundwater supply could be potentially significant. This could be partially mitigated by use of raw water for landscape irrigation. Overall, Alternative 4 is inconsistent with Placer County General Plan Policy 4.C.2 and is therefore less desirable than the proposed project with regard to use of water resources.

**Wastewater:** Alternative 4 would require no on- or off-site wastewater conveyance systems, and would eliminate impacts associated with those systems. There would be no demand from the project for treatment capacity at the LWWTP or RWWTP, and the construction of regional off-site treatment capacity might therefore be reduced or delayed. Individual septic systems may not be technically feasible for all parcels due to the presence of impermeable cap rock. Although the number of residences is small relative to the proposed project, the potential for groundwater and surface water impacts from septic systems would be significantly greater than that for the proposed project. In this regard, the proposed project is preferred over Alternative 4.

**Electricity/Gas/Energy:** Reducing the total number of units from 1,950 to 182 would significantly decrease the demand for electricity, gas, and energy. Because it would result in an overall decreased impact to resources and distribution systems, Alternative 4 is preferred over the proposed project.

**Parks and Recreation:** 2.4 acres each of passive recreation and improved parkland would be developed in the rural residential alternative in accordance with County requirements for the estimated 473 new residents. It is doubtful that many opportunities for trail linkages would occur. It is likely that new residents would also strain the existing recreational facilities in the vicinity, which are already at capacity. There is no preference between the proposed project and Alternative 4.

**Other Community/County Services:** Due to the significant reduction in the number of units and residents, the demand for community and County services will be less; therefore, Alternative 4 is preferred over the proposed project.

### Traffic and Circulation (Quantitative Analysis)

Table 16-18 summarizes the trip generation of Alternative 4. This alternative would generate about 1,740 daily vehicle trips on an average weekday (note that internal trip “ends” are not double counted). Nearly all of these daily vehicle trips would travel outside the project site. This alternative would add about 10,760 fewer daily vehicle trips to roadways outside the project site compared to the proposed project.

Access to the project site under Alternative 4 would be different than under the proposed project. One main rural road would be constructed, from Sierra College Boulevard (located where Lower Ranch Road is planned in the proposed project) to the currently proposed Bickford Ranch Road. This road would then head east and connect to Clark Tunnel Road. Clark Tunnel Road would remain open to vehicles both north and south of the project. This alternative would not have the second roadway access to Sierra College Boulevard (Bickford Ranch Road) contained in the proposed project.

Tables 16-19, 16-20, and 16-21 show roadway segment level of service analyses (based on daily traffic volumes) for Existing Plus Alternative 4, 2010 General Plan Plus Alternative 4 and Buildout of Project



**Table 16-18**  
**Estimated Trip Generation**  
**Alternative 4 – Rural Residential**

Land Use	Units	Daily		A.M. Peak Hour				P.M. Peak Hour			
				In		Out		In		Out	
		Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips
Rural Residential	182 DU	9.57	1,742	0.19	35	0.56	102	0.64	116	0.36	66
% Internal Trips			0%		0%		0%		0%		0%
Internal Trips			0		0		0		0		0
External Trips			1,742		35		102		116		66
<b>Total External Trips</b>			<b>1,742</b>		<b>35</b>		<b>102</b>		<b>116</b>		<b>66</b>

Source: DKS Associates, 1999.

**Table 16-19**  
**Roadway Segment Levels of Service**  
**Existing Plus Alternative 4**

Roadway	Segment	No. of Lanes	No Project		Alternative 4	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	2	4,880	A	5,220	A
	Twelve Bridges to Bickford Ranch Rd	2	5,600	A	6,760	A
	Bickford Ranch Rd to English Colony	2	5,600	A	6,760	A
	English Colony to King Road	2	5,780	A	6,940	A
	King Road to Taylor Road	2	6,100	A	7,220	A
	Taylor Road to Granite	2	10,200	A	11,110	B
	Granite to I-80	2	14,770	D	15,660	D
SR 193	SR 65 to Lincoln City Limits	2	6,700	A	6,840	A
	Lincoln City Limits to Sierra College	2	6,500	A	6,800	A
	Sierra College to Clark Tunnel	2	5,000	A	5,040	A
	Clark Tunnel to Newcastle	2	4,400	A	4,520	A
I-80	West of Sierra College Blvd	6	87,000	D	89,830	D
	East of SR 193	6	80,000	D	80,710	D
Lower Ranch Rd.	East of Sierra College	2	-		1,490	A
Bickford Ranch Rd.	East of Sierra College	2	-		-	
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	140	A
	Callison Rd To English Colony	2	240	A	400	A
English Colony Rd	Sierra College to Clark Tunnel	2	870	A	870	A
	Clark Tunnel to Taylor	2	2,530	A	2,690	A

Source: DKS Associates, 1999.

**Table 16-20  
Roadway Segment Levels of Service  
2010 General Plan Plus Alternative 4**

Roadway	Segment	No. of Lanes	No Project		Alternative 4	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	12,690	A	13,150	A
	Twelve Bridges to Bickford Ranch Rd	4	15,220	A	16,210	A
	Bickford Ranch Rd to English Colony	4	15,220	A	16,210	A
	English Colony to King Road	4	13,990	A	14,860	A
	King Road to Taylor Road	4	15,970	A	16,770	A
	Taylor Road to Granite	4	29,200	D	29,880	D
	Granite to I-80	6	30,970	A	31,580	A
SR 193	SR 65 to Lincoln City Limits	4	12,120	A	12,340	A
	Lincoln City Limits to Sierra College	4	19,550	A	19,990	A
	Sierra College to Clark Tunnel	2	13,430	C	13,460	C
	Clark Tunnel to Newcastle	2	9,300	A	9,380	A
I-80	West of Sierra College Blvd	6	110,000	F	111,980	F
	East of SR 193	6	100,000	F	100,420	F
Lower Ranch Rd.	East of Sierra College	2	-	A	1,560	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	-	A
12 Bridges Rd.	West of Sierra College	4	2,560	A	2,670	A
Clover Valley Rd.	West of Sierra College	2	2,820	A	2,940	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	110	A
	Callison Rd To English Colony	2	460	A	580	A
English Colony Rd	Sierra College to Clark Tunnel	2	3,200	A	3,200	A
	Clark Tunnel to Taylor	2	4,770	A	4,890	A

Source: DKS Associates, 1999.

**Table 16-21**  
**Roadway Segment Levels of Service**  
**Buildout of Project Vicinity Plus Alternative 4**

Roadway	Segment	No. of Lanes	No Project		Alternative 4	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	14,600	A	15,000	A
	Twelve Bridges to Bickford Ranch Rd	4	27,360	C	28,300	C
	Bickford Ranch Rd to English Colony	4	27,360	C	28,300	C
	English Colony to King Road	4	23,780	B	24,580	B
	King Road to Taylor Road	4	23,800	B	24,540	B
	Taylor Road to Granite	4	35,190	E	35,820	E
	Granite to I-80	6	34,710	B	35,270	B
SR 193	SR 65 to Lincoln City Limits	4	12,290	A	12,480	A
	Lincoln City Limits to Sierra College	4	21,870	B	22,260	B
	Sierra College to Clark Tunnel	2	14,600	D	14,620	D
	Clark Tunnel to Newcastle	2	9,930	A	10,000	A
I-80	West of Sierra College Blvd	6	111,420	F	111,980	F
	East of SR 193	6	100,700	F	100,420	F
Lower Ranch Road	East of Sierra College	2	-	A	1,590	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	-	A
12 Bridges Rd.	West of Sierra College	4	15,710	A	15,950	A
Clover Valley Rd.	West of Sierra College	2	6,640	A	6,780	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	90	A
	Callison Rd To English Colony	2	460	A	560	A
English Colony Rd	Sierra College to Clark Tunnel	2	5,430	A	5,430	A
	Clark Tunnel to Taylor	2	6,480	A	6,590	A

Source: DKS Associates, 1999.

Vicinity Plus Alternative 4, respectively. The roadway segment impacts under Alternative 2 would differ from the impacts of the proposed project in the following ways:

- Under Existing Plus Alternative 4 conditions, Sierra College Boulevard would operate at acceptable levels of service. The proposed project under this scenario would cause several sections of Sierra College Boulevard to operate at unacceptable levels of service.
- Sierra College Boulevard would operate at acceptable conditions as a 4-lane roadway between Taylor Road and Granite Drive under 2010 General Plan Plus Alternative 4 conditions. The proposed project under this scenario would cause this section to operate at LOS “E” conditions.
- Under Buildout of Project Vicinity Plus Alternative 4, Sierra College Boulevard would have the same level of service as the No Project Alternative. The proposed project under this scenario would cause several sections of Sierra College Boulevard to operate at unacceptable levels.

Tables 16-22, 16-23, and 16-24 show the intersection level of service analyses for the Existing Plus Alternative 4, 2010 General Plan Plus Alternative 4 and Buildout of Project Vicinity Plus Alternative 4, respectively. The intersection impacts under Alternative 4 would differ from the impacts of the proposed project in the following ways:

- Alternative 4 would cause the intersection of Sierra College Boulevard and the I-80 eastbound ramps to operate at LOS “E” under Existing Plus Alternative 4 conditions. The proposed project would cause three intersections in Sierra College Boulevard (Granite Drive, the I-80 westbound ramps and the I-80 eastbound ramps) to operate at unacceptable levels of service under this scenario.
- The intersection levels of service under 2010 General Plan Plus Alternative 4 conditions would be the same as the No Project Alternative. The proposed project would cause several intersections to operate at LOS “D,” “E,” or “F” conditions.
- Alternative 4 under the Buildout of Project Vicinity scenario would not cause the Sierra College Boulevard/King Road intersection to operate at an unacceptable level of service while the proposed project would.

Alternative 4 would likely not result in any “unmet transit needs,” and thus would not have a significant impact on transit services. Alternative 4 would be preferred over the proposed project.

## **Air Quality**

Alternative 4 would entail substantially less construction and grading than the proposed project, hence fugitive dust caused by earthmoving equipment and ozone precursor and particulate emissions from construction-related vehicles would be substantially less than for the proposed project.

Because this alternative would have very few residential units, the number of trips generated by Alternative 4 would be much lower than with the proposed project. This would result in a corresponding decrease in emissions generated by vehicular traffic. The absence of the village commercial site would mean that residents of the site would have to travel farther to shop; however, emission increases associated with additional miles traveled by residents would be more than offset by emission decreases associated with decreased development. The net effect of this alternative would be a substantial emissions decrease compared to the proposed project. Lower traffic volumes associated with this alternative would lead to lower CO concentrations along affected roadways. Because Alternative 4 would generate lower emissions than the proposed project, Alternative 4 would be preferred over the proposed project.

**Table 16-22**  
**Intersection Levels of Service, Existing Plus Alternative 4**

Intersection		Control Type	No Project				Plus Alternative 4			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
<b>SR 193</b>	<b>SR 65</b>	Signal	<b>A</b>	0.507 V/C	<b>A</b>	0.580 V/C	<b>A</b>	0.509 V/C	<b>A</b>	0.587 V/C
<b>Sierra College</b>	<b>SR 193</b>	Stop	<b>A</b>	2.1 sec	<b>A</b>	3.1 sec	<b>A</b>	2.3 sec	<b>A</b>	3.2 sec
	<i>NB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.8 sec	<b>B</b>	7.7 sec	<b>B</b>	7.1 sec
	<i>SB Left</i>		<b>B</b>	6.6 sec	<b>A</b>	3.1 sec	<b>B</b>	6.7 sec	<b>A</b>	3.2 sec
<b>SR 193</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.1 sec	<b>A</b>	0.1 sec
	<i>NB Approach</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	3.0 sec	<b>A</b>	3.2 sec
	<i>WB Left</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	2.4 sec	<b>A</b>	2.5 sec
<b>Sierra College</b>	<b>Lower Ranch Road</b>	Stop	<b>N/A</b>		<b>N/A</b>		<b>A</b>	1.1	<b>A</b>	0.8
	<i>SB Left</i>						<b>A</b>	2.5	<b>A</b>	3.4
	<i>WB Approach</i>						<b>B</b>	6.7	<b>B</b>	7.0
<b>Sierra College</b>	<b>Twelve Bridges Drive</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec	<b>A</b>	2.6 sec	<b>A</b>	3.5 sec	<b>A</b>	2.7 sec
	<i>EB Approach</i>		<b>A</b>	4.0 sec	<b>A</b>	4.3 sec	<b>A</b>	4.3 sec	<b>A</b>	4.7 sec
<b>Sierra College</b>	<b>Bickford Ranch Road</b>	Signal	<b>N/A</b>		<b>N/A</b>		<b>N/A</b>	V/C	<b>N/A</b>	V/C
<b>Sierra College</b>	<b>English Colony Way</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.2 sec	<b>A</b>	0.2 sec	<b>A</b>	0.2 sec
	<i>SB Left</i>		<b>A</b>	2.5 sec	<b>A</b>	3.0 sec	<b>A</b>	2.6 sec	<b>A</b>	3.3 sec
	<i>WB Approach</i>		<b>A</b>	4.4 sec	<b>A</b>	4.9 sec	<b>A</b>	4.7 sec	<b>B</b>	5.6 sec
<b>Sierra College</b>	<b>Clover Valley Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Del Mar Avenue</b>	Stop	<b>A</b>	0.8 sec	<b>A</b>	0.6 sec	<b>A</b>	0.8 sec	<b>A</b>	0.6 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec		sec	<b>A</b>	3.5 sec		sec
	<i>SB Left</i>				<b>A</b>	3.0			<b>A</b>	3.3
	<i>EB Approach</i>		<b>B</b>	6.9 sec	<b>B</b>	6.6 sec	<b>B</b>	7.8 sec	<b>B</b>	7.7 sec
	<i>WB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.6 sec	<b>B</b>	8.2 sec	<b>B</b>	7.7 sec
<b>Sierra College</b>	<b>King Road</b>	Stop	<b>A</b>	0.9 sec	<b>A</b>	1.2 sec	<b>A</b>	0.8 sec	<b>A</b>	1.2 sec
	<i>NB Left</i>		<b>A</b>	2.8 sec	<b>A</b>	2.6 sec	<b>A</b>	3.0 sec	<b>A</b>	2.7 sec
	<i>SB Left</i>		<b>A</b>	2.6 sec	<b>A</b>	3.1 sec	<b>A</b>	2.6 sec	<b>A</b>	3.4 sec
	<i>EB Approach</i>		<b>B</b>	5.2 sec	<b>B</b>	7.4 sec	<b>B</b>	5.8 sec	<b>B</b>	8.7 sec
	<i>WB Approach</i>		<b>A</b>	4.8 sec	<b>A</b>	5.0 sec	<b>B</b>	5.2 sec	<b>A</b>	5.6 sec
<b>Sierra College</b>	<b>Taylor Road</b>	Signal	<b>A</b>	0.443 V/C	<b>A</b>	0.489 V/C	<b>A</b>	0.478 V/C	<b>A</b>	0.531 V/C
<b>Sierra College</b>	<b>Granite Drive</b>	Signal	<b>A</b>	0.472 V/C	<b>B</b>	0.681 V/C	<b>A</b>	0.498 V/C	<b>C</b>	0.725 V/C
<b>Sierra College</b>	<b>I-80 WB Ramps</b>	Signal	<b>C</b>	0.753 V/C	<b>C</b>	0.798 V/C	<b>C</b>	0.767 V/C	<b>D</b>	0.841 V/C
<b>Sierra College</b>	<b>I-80 EB Ramps</b>	Signal	<b>C</b>	0.762 V/C	<b>D</b>	0.881 V/C	<b>D</b>	0.823 V/C	<b>E</b>	0.919 V/C
<b>English Colony Way</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.6 sec	<b>A</b>	0.5 sec	<b>A</b>	0.8 sec	<b>A</b>	0.6 sec
	<i>SB Approach</i>		<b>A</b>	4.6 sec	<b>A</b>	4.4 sec	<b>A</b>	4.8 sec	<b>A</b>	4.6 sec
	<i>EB Left</i>		<b>A</b>	2.4 sec	<b>A</b>	2.5 sec	<b>A</b>	2.4 sec	<b>A</b>	2.5 sec
<b>English Colony Way</b>	<b>Taylor Road</b>	Stop	<b>B</b>	6.4 sec	<b>D</b>	11.6 sec	<b>B</b>	6.8 sec	<b>C</b>	11.4 sec

Source: DKS Associates, 1999.

**Table 16-23**  
**Intersection Levels of Service, 2010 General Plan Plus Alternative 4**

Intersection		Control Type	No Project				Plus Alternative 4			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.948 V/C	F	1.158 V/C	E	0.953 V/C	F	1.165 V/C
Sierra College	SR 193	Signal	B	0.645 V/C	C	0.722 V/C	B	0.655 V/C	C	0.731 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 Sec
	NB Approach		A	3.5 sec	A	0.0 sec	A	3.5 sec	A	4.9 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.8 sec	A	3.8 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	1.6 sec	A	1.1 sec
	SB Left						A	4.2 sec	A	5.0 sec
	WB left						D	27.4 sec	D	27.0 sec
Sierra College	Twelve Bridges Drive	Signal	A	0.404 V/C	A	0.381 V/C	A	0.425 V/C	A	0.394 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		N/A		N/A	
Sierra College	English Colony Way	Signal	A	0.380 V/C	A	0.364 V/C	A	0.387 V/C	A	0.387 V/C
Sierra College	Clover Valley Road	Signal	A	0.300 V/C	A	0.252 V/C	A	0.320 V/C	A	0.278 V/C
Sierra College	Del Mar Avenue	Stop	A	1.5 sec	A	0.9 sec	A	1.7 sec	A	1.0 sec
	NB Left		A	4.9 sec		sec	B	5.2 sec		sec
	SB Left		A	4.8 sec	A	4.5 sec	A	4.9 sec	A	4.9 sec
	EB Approach		D	25.0 sec	D	23.4 sec	D	28.0 sec	D	27.4 sec
	WB Approach		E	30.0 sec	D	23.4 sec	E	34.6 sec	D	27.0 sec
Sierra College	King Road	Signal	A	0.404 V/C	A	0.443 V/C	A	0.412 V/C	A	0.465 V/C
Sierra College	Taylor Road	Signal	D	0.880 V/C	D	0.878 V/C	D	0.895 V/C	D	0.887 V/C
Sierra College	Granite Drive	Signal	B	0.628 V/C	C	0.743 V/C	B	0.632 V/C	C	0.753 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.745 V/C	C	0.733 V/C	C	0.749 V/C	C	0.738 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.634 V/C	B	0.619 V/C	B	0.637 V/C	B	0.633 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.7 sec	A	0.5 sec	A	0.8 sec	A	0.5 sec
	SB Approach		B	6.0 sec	B	5.8 sec	B	6.3 sec	B	6.0 sec
	EB Left		A	3.0 sec	A	2.6 sec	A	3.0 sec	A	2.6 sec
English Colony Way	Taylor Road	Signal	B	0.670 V/C	C	0.788 V/C	B	0.676 V/C	C	0.792 V/C

Source: DKS Associates, 1999.

**Table 16-24**  
**Intersection Levels of Service, Buildout of Project Vicinity Plus Alternative 4**

Intersection		Control Type	No Project				Plus Alternative 4			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.991 V/C	F	1.189 V/C	E	0.993 V/C	F	1.196 V/C
SR 193	Ferrari Ranch Road	Signal	B	0.646 V/C	C	0.797 V/C	B	0.653 V/C	D	0.805 V/C
Sierra College	SR 193	Signal	D	0.897 V/C	E	0.902 V/C	C	0.726 V/C	C	0.778 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 sec
	NB Approach		B	9.9 sec	C	11.0 sec	B	5.2 sec	B	7.1 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	3.9 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	2.1 sec	A	1.3 sec
	SB Left						A	4.7 sec	A	5.0 sec
	WB left						E	36.9 sec	E	34.0 sec
Sierra College	Twelve Bridges Drive	Signal	C	0.722 V/C	C	0.786 V/C	C	0.741 V/C	D	0.810 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		N/A	V/C	N/A	V/C
Sierra College	English Colony Way	Signal	A	0.516 V/C	A	0.591 V/C	A	0.523 V/C	B	0.613 V/C
Sierra College	Clover Valley Road	Signal	A	0.588 V/C	A	0.469 V/C	B	0.606 V/C	A	0.494 V/C
Sierra College	Del Mar Avenue	Stop	C	11.1 sec	A	2.8 sec	C	13.9 sec	A	3.4 sec
	NB Left		B	9.6 sec		sec	C	10.1 sec		sec
	SB Left		B	6.9 sec	B	8.9 sec	B	7.0 sec	B	9.5 sec
	EB Approach		F	115.0 sec	F	112.8 sec	F	132.8 sec	F	145.7 sec
	WB Approach		F	>180 sec	F	108.0 sec	F	>180 sec	F	131.6 sec
Sierra College	King Road	Signal	A	0.565 V/C	C	0.710 V/C	A	0.573 V/C	C	0.731 V/C
Sierra College	Taylor Road	Signal	E	0.990 V/C	E	0.928 V/C	F	1.003 V/C	E	0.936 V/C
Sierra College	Granite Drive	Signal	B	0.682 V/C	D	0.805 V/C	B	0.686 V/C	D	0.814 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.792 V/C	D	0.818 V/C	C	0.792 V/C	D	0.832 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.696 V/C	C	0.736 V/C	B	0.698 V/C	C	0.748 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.6 sec	A	0.4 sec	A	0.7 sec	A	0.5 sec
	SB Approach		B	7.3 sec	B	7.7 sec	B	7.6 sec	B	7.5 sec
	EB Left		A	3.1 sec	A	3.1 sec	A	3.1 sec	A	3.0 sec
English Colony Way	Taylor Road	Signal	C	0.750 V/C	D	0.801 V/C	C	0.756 V/C	D	0.804 V/C

Source: DKS Associates, 1999.



## **Noise**

Construction-generated noise for Alternative 4 would be much less than for the proposed project because fewer residential units would need to be constructed, and mass grading of the golf course area would not occur. Noise levels generated by residential activity at the site would in general be lower than with the proposed project because Alternative 4 would entail lower traffic volumes onsite and a lower population on the site. Off-site traffic noise impacts would also be less with Alternative 4, since lower traffic volumes associated with this alternative would lead to lower noise levels along affected roadways. Based on potential noise effects, Alternative 4 would be preferred over the proposed project.

## **Soils, Geology, and Seismicity**

Alternative 4 would involve substantially less construction and soil disturbance than the proposed project. As a result, there would be proportionately less potential soil erosion, topographic alteration and slope instability due to grading activities. Alternative 4 would entail fewer dwelling units, thus the potential for foundation instability and differential settlement under structures would be reduced. Therefore, Alternative 4 would be preferred over the proposed project.

## **Hazardous Waste/Materials**

Alternative 4 would involve less construction activities and a lower population, and therefore less use of hazardous materials during and after construction. In addition, Alternative 4 would not include a golf course, driving range, or parks, which would eliminate the usage of agricultural chemicals for these areas. Because of the decreased chemical usage and potential for a release of hazardous materials, Alternative 4 would be preferred over the proposed project.

## **Hydrology and Water Quality**

Reducing the total number of developable lots to 182 would minimize the amount of grading and impervious surface and increase groundwater infiltration, thereby decreasing the potential impacts to groundwater. These lots, however, would obtain water from the groundwater aquifer through individual wells, which would impact groundwater resources to a much greater extent than the proposed project. In addition, the increased potential for adverse groundwater impacts resulting from use of individual septic systems would be significant due to the large number of additional septic systems. Due to the greatly reduced number of residential units and increase in the average lot size, the total impervious area would be much less than that for the proposed project. Additionally, there would be no golf course. Runoff water quality can therefore be expected to be better than that predicted for the proposed project. The proposed project is preferred over Alternative 4 with respect to groundwater resources and groundwater quality. Alternative 4 is preferred over the proposed project with respect to surface water quality.

The negative impacts to groundwater resources and water quality appear to outweigh the benefits to surface quality. In addition, Alternative 4 is inconsistent with Placer County General Plan Policy 4.C.2. For these reasons, the proposed project is preferred over Alternative 4.

## **Biology**

The reduction in proposed construction under this alternative could result in decreased construction impacts on oaks and other protected trees and special-status plant habitat. This decrease would be slightly augmented by the lack of trail construction impacts and use. Construction impacts on wetlands and other waters of the United States would likely be less than the proposed project because building envelopes would be required to avoid wetlands. Additionally, wetlands would be placed in wetland protection

easements. Protection of wetlands under this alternative would result in impacts less than those identified for the proposed project on special-status wildlife species associated with wetlands, including vernal pool fairy shrimp, California red-legged frog, foothill yellow-legged frog, and northwestern pond turtle. Potential impacts to upland special-status species, including VELB and Cooper's hawk, would be equal to impacts identified for the proposed project.

This alternative would result in an equivalent level of operation phase impacts on oaks and other protected trees and special-status plant habitat compared to the proposed project. Implementation of CC&Rs may reduce the level of this impact. Operation phase impacts on riparian vegetation along Clover Valley Creek and other drainages would not likely differ from the proposed project. Operation phase impacts on wetlands and other waters of the United States could be less than the proposed project levels, depending on the location and extent of wetland easements included in the CC&Rs. Operation impacts on wildlife and special-status wildlife would be equal to or less than impacts identified for the proposed project.

Because most construction impacts could be less than the proposed project, and operation impacts could be equal to or less than the proposed project, Alternative 4 would be preferred over the proposed project.

### **Cultural Resources**

As it is unclear how each parcel will be developed with this alternative, assessing impacts is difficult. As no open space occurs with Alternative 4, all of the important cultural resources and the 17 potentially important sites (i.e., isolated milling stations) all could be impacted with this scheme. Unless easement restrictions are included within the project CC&Rs, all cultural resources of concern situated with Bickford Ranch could be impacted under Alternative 4.

Impacts to paleontological resources would likely decrease with Alternative 4 as the total number of residential units atop the ridge system where the Mehrten lahars predominate would be reduced. Decreased construction within this particular geologic unit decreases the potential for encountering paleontological resources. The proposed project is preferred over Alternative 4.

### **Visual Quality**

The lower density development would be aesthetically more in keeping with the rural residential character of the landscape setting of the surrounding communities. A preliminary lotting plan has been developed for Alternative 4, which illustrates the entire project site divided into 10-acre lots, with some natural open space to be preserved through incorporating wetland and steep sloped areas in protected easements. Due to the increase in lot size and reduction in number of lots, development along ridgelines could be easily avoided. However, under the current alternative description, homes could be placed anywhere on a given lot. If development or ridgeline were avoided, and similar design guidelines to those described under the proposed project were implemented for Alternative 4, this alternative would not be in conflict with Placer County General Plan policies.

Similar to the proposed project, the implementation of Alternative 4 would result in unavoidable changes to the rural landscape character of the project site. However, Alternative 4 would be preferred over the proposed project.

#### **16.1.2.5 Alternative 5 – Clark Tunnel Road Alternatives**

Alternative 5 considers three configurations for Clark Tunnel Road as it leaves the project site from the north and from the southeast. In combination with the proposed project, which would close vehicular

access to and from the project via Clark Tunnel Road, and the three sub-alternatives in Alternative 5, all major configurations of access and closure for Clark Tunnel Road are analyzed in this Draft EIR. (The current configuration of Clark Tunnel Road is shown on Figure 7-1.) Each sub-alternative is described below, and impacts are analyzed for each sub-alternative.

### **Sub-Alternative 5-1: Retain Full Vehicular Access**

In this sub-alternative, vehicular access between SR 193 and the Penryn community via Clark Tunnel Road would be retained. Clark Tunnel Road would require substantial improvements on-site and off-site to handle the greater traffic volumes associated with development of the project. Conceptual improvements within the project are shown on Figure 16-4. To the north of the project site at the intersection of Clark Tunnel Road and SR 193, improvements would be needed to provide adequate line-of-sight for vehicles turning into and out of the project, where a curve in the roadway combined with the steep alignment in this area and 50 mph speeds occur. To the south, Clark Tunnel road is very winding and steep, with numerous switchbacks along this narrow two-lane roadway. Construction of improvements required to accommodate the increased traffic generated by the proposed project would be very expensive and the analysis below assumes that no improvements would be made to Clark Tunnel Road south of the project limits.

Environmental impacts associated with Sub-Alternative 5-1 are qualitatively analyzed below.

#### **Land Use**

Sub-Alternative 5-1 would not create significant land use impacts. Impacts associated with intensified use of the roadways to and from the site are identified in the traffic/circulation discussion of this alternative. With regard to land use, there is no preference between the proposed project and Sub-Alternative 5-1.

#### **Population and Housing**

This sub-alternative would have no significant impact on population, employment or housing. There is no preference between the proposed project and Sub-Alternative 5-1.

#### **Public Services and Utilities**

**Water:** Sub-Alternative 5-1 would have the same impacts as the proposed project in terms of impacts to water supply, treatment, and conveyance systems. There is no preference between the proposed project and Sub-Alternative 5-1.

**Wastewater:** Impacts related to wastewater conveyance and treatment would be the same as those identified for the proposed project. There is no preference between the proposed project and Sub-Alternative 5-1.

**Electricity/Gas/Energy:** Sub-Alternative 5-1's impacts on electricity, gas, and energy would be the same as for the proposed project. There is no preference between the proposed project and Sub-Alternative 5-1.

**Parks and Recreation:** There would be no difference between the proposed project and this sub-alternative in terms of park and recreation facilities. There is no preference between the proposed project and Sub-Alternative 5-1.

**Other County/Community Services:** Because there would be no change in the number of residents, there would be no difference in impacts between this sub-alternative and the proposed project for other County and community services. There is no preference between the proposed project and Sub-Alternative 5-1.

### **Traffic and Circulation (Quantitative Analysis)**

The trip generation under Sub-Alternative 5-1 would be the same as the proposed project (see Table 7-6). In this sub-alternative, vehicular access between SR 193 and the Penryn community via Clark Tunnel Road would be retained.

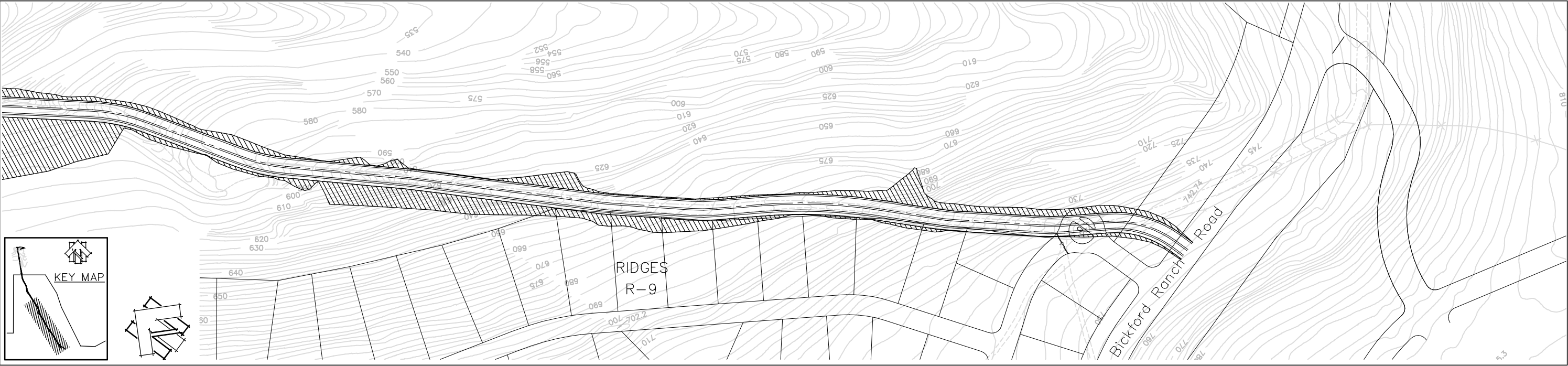
Tables 16-25, 16-26, and 16-27 show roadway segment level of service analyses (based on daily traffic volumes) for Existing Plus Sub-Alternative 5-1, 2010 General Plan Plus Sub-Alternative 5-1 and Buildout of Project Vicinity Plus Sub-Alternative 5-1, respectively. The roadway segment impacts under Sub-Alternative 5-1 would differ from impacts of the proposed project in the following ways:

- Under Existing Plus Sub-Alternative 5-1 conditions, Sierra College Boulevard between Bickford Ranch Road and King Road would operate at LOS “C.” The proposed project would cause this section of roadway to operate at LOS “D” under this scenario.
- Sub-Alternative 5-1 would cause the section of SR 193 between Sierra College Boulevard and Clark Tunnel Road to operate at LOS “D” under the 2010 General Plan, while the proposed project would operate at LOS “C” conditions under this scenario. LOS “D” conditions are acceptable on a state highway.
- This sub-alternative would increase traffic on Clark Tunnel Road under all three development scenarios. While Clark Tunnel Road would operate at an acceptable level of service under each scenario, substantial improvements along Clark Tunnel Road (such as lengthening vertical and horizontal curves, improvements to sight distances and increasing lane widths) would be required due to safety issues posed by increased traffic volumes.

Tables 16-28, 16-29, and 16-30 show the intersection level of service analyses for the Existing Plus Sub-Alternative 5-1, 2010 General Plan Plus Sub-Alternative 5-1 and Buildout of Project Vicinity Plus Sub-Alternative 5-1, respectively. The intersection impacts under Sub-Alternative 5-1 would differ from the impacts of the proposed project in the following ways:


- Under Existing Plus Sub-Alternative 5-1 conditions, the westbound stop-sign controlled approach of King Road at Sierra College Boulevard would operate at LOS “C.” The proposed project under this scenario would cause the westbound approach to worsen to LOS “D” during the p.m. peak hour.
- Under 2010 General Plan conditions, Sub-Alternative 5-1 would cause the intersection of Sierra College Boulevard and SR 193 to operate at LOS “D” during the p.m. peak hour, while it would operate at LOS “C” conditions under the proposed project.
- Under both the 2010 General Plan Plus Sub-Alternative 5-1 and Buildout of Project Vicinity Plus Sub-Alternative 5-1, the westbound stop-sign controlled approach of Lower Ranch Road at Sierra College Boulevard would operate at LOS “D.” This roadway approach would operate at LOS “E” with the proposed project under these two development scenarios.

Sub-Alternative 5-1 would have about the same impacts on transit services and bikeways as the proposed project. The proposed project would be preferred over Sub-Alternative 5-1.

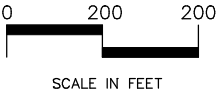


SOURCES: GW Consulting Engineers

LEGEND

 Limits of Grading Beyond Roadway

**BICKFORD**  
RANCH



ALTERNATIVE 5  
CLARK TUNNEL ROAD

1999 Bickford Ranch Specific Plan EIR  
Job No. 21305-002-038 Placer County, California



FIGURE 16-4

**Table 16-25**  
**Roadway Segment Levels of Service**  
**Existing Plus Sub-Alternative 5-1 (Retain Full Access)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-1	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	2	4,880	A	6,170	A
	Twelve Bridges to Bickford Ranch Rd	2	5,600	A	6,770	A
	Bickford Ranch Rd to English Colony	2	5,600	A	14,200	C
	English Colony to King Road	2	5,780	A	14,050	C
	King Road to Taylor Road	2	6,100	A	13,950	C
	Taylor Road to Granite	2	10,200	A	16,700	E
	Granite to I-80	2	14,770	D	21,140	F
SR 193	SR 65 to Lincoln City Limits	2	6,700	A	7,700	A
	Lincoln City Limits to Sierra College	2	6,500	A	8,630	A
	Sierra College to Clark Tunnel	2	5,000	A	6,180	A
	Clark Tunnel to Newcastle	2	4,400	A	5,270	A
I-80	West of Sierra College Blvd	6	87,000	D	92,000	D
	East of SR 193	6	80,000	D	81,250	D
Lower Ranch Rd.	East of Sierra College	2	-		770	A
Bickford Ranch Rd.	East of Sierra College	2	-		9,110	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	1,760	A
	Callison Rd To English Colony	2	240	A	1,140	A
English Colony Rd	Sierra College to Clark Tunnel	2	870	A	1,190	A
	Clark Tunnel to Taylor	2	2,530	A	3,760	A

Source: DKS Associates, 1999.

**Table 16-26**  
**Roadway Segment Levels of Service**  
**2010 General Plan Plus Sub-Alternative 5-1 (Retain Full Access)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-1	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	12,690	A	14,460	A
	Twelve Bridges to Bickford Ranch Rd	4	15,220	A	17,380	A
	Bickford Ranch Rd to English Colony	4	15,220	A	22,550	B
	English Colony to King Road	4	13,990	A	20,220	A
	King Road to Taylor Road	4	15,970	A	21,600	B
	Taylor Road to Granite	4	29,200	D	34,070	E
	Granite to I-80	6	30,970	A	35,350	B
SR 193	SR 65 to Lincoln City Limits	4	12,120	A	13,740	A
	Lincoln City Limits to Sierra College	4	19,550	A	22,680	B
	Sierra College to Clark Tunnel	2	13,430	C	15,030	D
	Clark Tunnel to Newcastle	2	9,300	A	9,920	A
I-80	West of Sierra College Blvd	6	110,000	F	113,500	F
	East of SR 193	6	100,000	F	100,750	F
Lower Ranch Rd.	East of Sierra College	2	-	A	910	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	8,940	A
12 Bridges Rd.	West of Sierra College	4	2,560	A	3,310	A
Clover Valley Rd.	West of Sierra College	2	2,820	A	3,700	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	2,130	A
	Callison Rd To English Colony	2	460	A	1,130	A
English Colony Rd	Sierra College to Clark Tunnel	2	3,200	A	3,430	A
	Clark Tunnel to Taylor	2	4,770	A	5,670	A

Source: DKS Associates, 1999.

**Table 16-27**  
**Roadway Segment Levels of Service**  
**Buildout of Project Vicinity Plus Sub-Alternative 5-1 (Retain Full Access)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-1	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	14,600	A	16,140	A
	Twelve Bridges to Bickford Ranch Rd	4	27,360	C	30,310	D
	Bickford Ranch Rd to English Colony	4	27,360	C	34,270	E
	English Colony to King Road	4	23,780	B	29,510	D
	King Road to Taylor Road	4	23,800	B	28,940	D
	Taylor Road to Granite	4	35,190	E	39,690	F
	Granite to I-80	6	34,710	B	38,710	C
SR 193	SR 65 to Lincoln City Limits	4	12,290	A	13,660	A
	Lincoln City Limits to Sierra College	4	21,870	B	24,620	B
	Sierra College to Clark Tunnel	2	14,600	D	16,000	D
	Clark Tunnel to Newcastle	2	9,930	A	10,430	A
I-80	West of Sierra College Blvd	6	111,420	F	113,500	F
	East of SR 193	6	100,700	F	100,750	F
Lower Ranch Road	East of Sierra College	2	-	A	860	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	9,350	A
12 Bridges Rd.	West of Sierra College	4	15,710	A	17,460	A
Clover Valley Rd.	West of Sierra College	2	6,640	A	7,640	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	1,750	A
	Callison Rd To English Colony	2	460	A	1,050	A
English Colony Rd	Sierra College to Clark Tunnel	2	5,430	A	5,610	A
	Clark Tunnel to Taylor	2	6,480	A	7,260	A

Source: DKS Associates, 1999.



**Table 16-28**  
**Intersection Levels of Service, Existing Plus Sub-Alternative 5-1 (Retain Full Access)**

Intersection		Control Type	No Project				Plus Sub-Alternative 5-1			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
<b>SR 193</b>	<b>SR 65</b>	Signal	<b>A</b>	0.507 V/C	<b>A</b>	0.580 V/C	<b>A</b>	0.526 V/C	<b>B</b>	0.617 V/C
<b>Sierra College</b>	<b>SR 193</b>	Stop	<b>A</b>	2.1 sec	<b>A</b>	3.1 sec	<b>A</b>	3.0 sec	<b>A</b>	3.8 sec
	<i>NB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.8 sec	<b>B</b>	9.9 sec	<b>C</b>	9.2 sec
	<i>SB Left</i>		<b>B</b>	6.6 sec	<b>A</b>	3.1 sec	<b>B</b>	7.6 sec	<b>B</b>	7.9 sec
<b>SR 193</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	1.2 sec	<b>A</b>	0.8 sec
	<i>NB Approach</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	4.4 sec	<b>B</b>	5.1 sec
	<i>WB Left</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	2.5 sec	<b>A</b>	2.8 sec
<b>Sierra College</b>	<b>Lower Ranch Road</b>	Stop	<b>N/A</b>		<b>N/A</b>		<b>A</b>	0.5	<b>A</b>	0.4
	<i>SB Left</i>						<b>A</b>	2.6	<b>A</b>	3.3
	<i>WB Approach</i>						<b>B</b>	5.4	<b>B</b>	5.8
<b>Sierra College</b>	<b>Twelve Bridges Drive</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec	<b>A</b>	2.6 sec	<b>A</b>	3.4 sec	<b>A</b>	2.7 sec
	<i>EB Approach</i>		<b>A</b>	4.0 sec	<b>A</b>	4.3 sec	<b>A</b>	4.2 sec	<b>A</b>	4.7 sec
<b>Sierra College</b>	<b>Bickford Ranch Road</b>	Signal	<b>N/A</b>		<b>N/A</b>		<b>B</b>	0.547 V/C	<b>B</b>	0.482 V/C
<b>Sierra College</b>	<b>English Colony Way</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.2 sec	<b>A</b>	0.3 sec	<b>A</b>	0.3 sec
	<i>SB Left</i>		<b>A</b>	2.5 sec	<b>A</b>	3.0 sec	<b>A</b>	3.2 sec	<b>A</b>	4.9 sec
	<i>WB Approach</i>		<b>A</b>	4.4 sec	<b>A</b>	4.9 sec	<b>B</b>	7.0 sec	<b>B</b>	8.1 sec
<b>Sierra College</b>	<b>Clover Valley Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Del Mar Avenue</b>	Stop	<b>A</b>	0.8 sec	<b>A</b>	0.6 sec	<b>A</b>	1.0 sec	<b>A</b>	0.7 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec		sec	<b>B</b>	5.1 sec		sec
	<i>SB Left</i>				<b>A</b>	3.0			<b>A</b>	4.9
	<i>EB Approach</i>		<b>B</b>	6.9 sec	<b>B</b>	6.6 sec	<b>C</b>	16.2 sec	<b>C</b>	16.5 sec
	<i>WB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.6 sec	<b>C</b>	18.3 sec	<b>C</b>	16.5 sec
<b>Sierra College</b>	<b>King Road</b>	Stop	<b>A</b>	0.9 sec	<b>A</b>	1.2 sec	<b>A</b>	0.9 sec	<b>A</b>	1.5 sec
	<i>NB Left</i>		<b>A</b>	2.8 sec	<b>A</b>	2.6 sec	<b>A</b>	4.4 sec	<b>A</b>	3.4 sec
	<i>SB Left</i>		<b>A</b>	2.6 sec	<b>A</b>	3.1 sec	<b>A</b>	3.3 sec	<b>B</b>	5.1 sec
	<i>EB Approach</i>		<b>B</b>	5.2 sec	<b>B</b>	7.4 sec	<b>C</b>	11.1 sec	<b>C</b>	19.6 sec
	<i>WB Approach</i>		<b>A</b>	4.8 sec	<b>A</b>	5.0 sec	<b>B</b>	8.5 sec	<b>B</b>	9.7 sec
<b>Sierra College</b>	<b>Taylor Road</b>	Signal	<b>A</b>	0.443 V/C	<b>A</b>	0.489 V/C	<b>B</b>	0.663 V/C	<b>C</b>	0.722 V/C
<b>Sierra College</b>	<b>Granite Drive</b>	Signal	<b>A</b>	0.472 V/C	<b>B</b>	0.681 V/C	<b>B</b>	0.699 V/C	<b>E</b>	0.928 V/C
<b>Sierra College</b>	<b>I-80 WB Ramps</b>	Signal	<b>C</b>	0.753 V/C	<b>C</b>	0.798 V/C	<b>D</b>	0.898 V/C	<b>F</b>	1.039 V/C
<b>Sierra College</b>	<b>I-80 EB Ramps</b>	Signal	<b>C</b>	0.762 V/C	<b>D</b>	0.881 V/C	<b>E</b>	0.948 V/C	<b>F</b>	1.100 V/C
<b>English Colony Way</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.6 sec	<b>A</b>	0.5 sec	<b>A</b>	1.2 sec	<b>A</b>	0.8 sec
	<i>SB Approach</i>		<b>A</b>	4.6 sec	<b>A</b>	4.4 sec	<b>B</b>	5.6 sec	<b>B</b>	5.1 sec
	<i>EB Left</i>		<b>A</b>	2.4 sec	<b>A</b>	2.5 sec	<b>A</b>	2.5 sec	<b>A</b>	2.6 sec
<b>English Colony Way</b>	<b>Taylor Road</b>	Stop	<b>B</b>	6.4 sec	<b>D</b>	11.6 sec	<b>B</b>	9.3 sec	<b>C</b>	12.8 sec

Source: DKS Associates, 1999.

**Table 16-29**  
**Intersection Levels of Service, 2010 General Plan Plus Sub-Alternative 5-1 (Retain Full Access)**

Intersection		Control Type	No Project				Plus Sub-Alternative 5-1			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.948 V/C	F	1.158 V/C	E	0.985 V/C	F	1.199 V/C
Sierra College	SR 193	Signal	B	0.645 V/C	C	0.722 V/C	C	0.730 V/C	D	0.800 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	1.3 sec	A	0.9 sec
	NB Approach		A	3.5 sec	A	0.0 sec	C	10.1 sec	C	11.8 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	4.3 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.6 sec	A	0.4 sec
	SB Left						A	4.4 sec	A	4.9 sec
	WB left						D	24.6 sec	D	25.3 sec
Sierra College	Twelve Bridges Drive	Signal	A	0.404 V/C	A	0.381 V/C	A	0.447 V/C	A	0.431 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		A	0.460 V/C	A	0.394 V/C
Sierra College	English Colony Way	Signal	A	0.380 V/C	A	0.364 V/C	A	0.472 V/C	A	0.498 V/C
Sierra College	Clover Valley Road	Signal	A	0.300 V/C	A	0.252 V/C	A	0.427 V/C	A	0.398 V/C
Sierra College	Del Mar Avenue	Stop	A	1.5 sec	A	0.9 sec	A	3.5 sec	A	2.0 sec
	NB Left		A	4.9 sec		sec	B	7.2 sec		sec
	SB Left		A	4.8 sec	A	4.5 sec	B	5.8 sec	B	6.7 sec
	EB Approach		D	25.0 sec	D	23.4 sec	F	61.3 sec	F	65.6 sec
	WB Approach		E	30.0 sec	D	23.4 sec	F	92.5 sec	F	55.5 sec
Sierra College	King Road	Signal	A	0.404 V/C	A	0.443 V/C	A	0.477 V/C	A	0.575 V/C
Sierra College	Taylor Road	Signal	D	0.880 V/C	D	0.878 V/C	E	0.971 V/C	E	0.932 V/C
Sierra College	Granite Drive	Signal	B	0.628 V/C	C	0.743 V/C	B	0.673 V/C	D	0.803 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.745 V/C	C	0.733 V/C	C	0.789 V/C	D	0.809 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.634 V/C	B	0.619 V/C	B	0.648 V/C	B	0.695 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.7 sec	A	0.5 sec	A	1.1 sec	A	0.7 sec
	SB Approach		B	6.0 sec	B	5.8 sec	B	7.3 sec	B	6.7 sec
	EB Left		A	3.0 sec	A	2.6 sec	A	3.1 sec	A	2.8 sec
English Colony Way	Taylor Road	Signal	B	0.670 V/C	C	0.788 V/C	C	0.716 V/C	D	0.807 V/C

Source: DKS Associates, 1999.

**Table 16-30**  
**Intersection Levels of Service, Buildout of Project Vicinity Plus Sub-Alternative 5-1 (Retain Full Access)**

Intersection		Control Type	No Project				Plus Sub-Alternative 5-1			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.991 V/C	F	1.189 V/C	F	1.034 V/C	F	1.226 V/C
SR 193	Ferrari Ranch Road	Signal	B	0.646 V/C	C	0.797 V/C	B	0.695 V/C	D	0.847 V/C
Sierra College	SR 193	Signal	D	0.897 V/C	E	0.902 V/C	C	0.763 V/C	D	0.838 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.7 sec	A	0.8 sec
	NB Approach		B	9.9 sec	C	11.0 sec	C	10.6 sec	C	12.3 sec
	WB left		A	2.8 sec	A	0.0 sec	A	3.1 sec	A	4.3 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.4 sec	A	0.4 sec
	SB Left						B	5.1 sec	A	4.9 sec
	WB left						D	28.3 sec	D	29.4 sec
Sierra College	Twelve Bridges Drive	Signal	C	0.722 V/C	C	0.786 V/C	D	0.804 V/C	D	0.847 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		B	0.593 V/C	B	0.660 V/C
Sierra College	English Colony Way	Signal	A	0.516 V/C	A	0.591 V/C	B	0.646 V/C	C	0.718 V/C
Sierra College	Clover Valley Road	Signal	A	0.588 V/C	A	0.469 V/C	B	0.686 V/C	B	0.610 V/C
Sierra College	Del Mar Avenue	Stop	C	11.1 sec	A	2.8 sec	F	46.6 sec	C	16.2 sec
	NB Left		B	9.6 sec		sec	C	11.9 sec		sec
	SB Left		B	6.9 sec	B	8.9 sec	C	9.9 sec	C	12.7 sec
	EB Approach		F	115.0 sec	F	112.8 sec	F	>180 sec	F	>180 sec
	WB Approach		F	>180 sec	F	108.0 sec	F	>180 sec	F	>180 sec
Sierra College	King Road	Signal	A	0.565 V/C	C	0.710 V/C	B	0.689 V/C	D	0.833 V/C
Sierra College	Taylor Road	Signal	E	0.990 V/C	E	0.928 V/C	F	1.040 V/C	F	1.013 V/C
Sierra College	Granite Drive	Signal	B	0.682 V/C	D	0.805 V/C	C	0.768 V/C	D	0.860 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.792 V/C	D	0.818 V/C	D	0.867 V/C	D	0.894 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.696 V/C	C	0.736 V/C	C	0.704 V/C	D	0.805 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.6 sec	A	0.4 sec	A	0.9 sec	A	0.7 sec
	SB Approach		B	7.3 sec	B	7.7 sec	B	8.5 sec	B	8.3 sec
	EB Left		A	3.1 sec	A	3.1 sec	A	3.2 sec	A	3.2 sec
English Colony Way	Taylor Road	Signal	C	0.750 V/C	D	0.801 V/C	C	0.791 V/C	D	0.818 V/C

Source: DKS Associates, 1999.

**Air Quality**

Construction impacts associated with this sub-alternative would be slightly greater than with the proposed project, since this sub-alternative would entail construction of improvements to Clark Tunnel Road. No additional vehicle trips would be generated by this sub-alternative; however, proposed project generated trips would be redistributed on the roadway network. This redistribution of traffic may lead to a slightly lower VMT, which would result in an overall decrease in regional emissions. However, this alternative would degrade the LOS at some intersections, increasing vehicular congestion and associated emissions. Because with this sub-alternative vehicle volumes on Clark Tunnel Road and English Colony Way would increase slightly, roadside pollutant concentrations along those roadways would increase over concentrations associated with the proposed project. Decreases in vehicle volumes along other roadways, such as Sierra College Boulevard, would decrease pollutant concentrations along those roadways. More residential land uses are located along English Colony Way, however, than along Sierra College Boulevard; therefore increased pollutant concentrations associated with this sub-alternative would be more likely to affect residential receivers. There is no clear preference between the proposed project and Sub-Alternative 5-1 with respect to air quality.

**Noise**

Construction noise impacts associated with Sub-Alternative 5-1 would be slightly greater than with the proposed project because improvements to Clark Tunnel Road would be constructed. The effect of Sub-Alternative 5-1 would be to redistribute existing trips as opposed to generating additional vehicle trips. This vehicle volume redistribution would generate higher noise levels along Clark Tunnel Road and English Colony Way, and would slightly lower noise levels along other affected roadways. Because of the presence of noise-sensitive receivers along English Colony Way and because of their proximity to the roadway, slight traffic volume increases along this roadway would be more likely to affect sensitive receivers than along other roadways. The proposed project would thus be preferred over Sub-Alternative 5-1 with respect to noise impacts.

**Soils, Geology, and Seismicity**

Because of the improvements necessary to Clark Tunnel Road under Sub-Alternative 5-1, there would be greater potential soil erosion, topographic alteration and slope instability. The proposed project would be preferred over Sub-Alternative 5-1.

**Hazardous Waste/Materials**

Since construction activity would be increased as a result of the necessary improvements to Clark Tunnel Road under Sub-Alternative 5-1, there would be a slightly greater potential for the release of hazardous materials during construction. Impacts could be mitigated through mitigation measures described for the proposed project. Therefore, there would be no preference between the proposed project and Sub-Alternative 5-1.

**Hydrology and Water Quality**

No impacts to hydrology or groundwater resources are anticipated from Sub-Alternative 5-1. Impacts to surface water and groundwater quality would be essentially the same as those identified for the proposed project, with the exception of increased potential for erosion and resultant increases in runoff sediment content during and after construction of roadway improvements. However, the erosion control mitigation measures described for the proposed project could be re-designed for this alternative to reduce the level of impact to less than significant. There is no clear preference between this sub-alternative and the proposed project.

### **Biology**

Loss of protected trees because of construction within this sub-alternative project area would increase compared with the proposed project. The section of Clark Tunnel Road from the intersection with Bickford Ranch Road to the intersection with SR 193 is outside of the area included in the tree survey and the tree removal plan maps (GW Consulting Engineers, no date). The number of potentially affected trees for this section of Clark Tunnel Road was estimated by comparing the approximate density of trees in nearby areas that are included on the tree removal plan maps with the extent of area proposed for grading to improve Clark Tunnel Road. The additional number of affected trees could vary from approximately 200 to 300 protected trees.

Construction impacts on riparian vegetation along Clover Valley Creek and other drainages would not differ from the proposed project. There would be a slight increase in construction impacts on special-status plant habitat in the oak woodland. Indirect construction impacts on wetlands and other waters of the United States would not likely increase. Indirect impacts on the nearby drainage (RW-7 on Figure 13-2 in Chapter 13) would be avoided by the inclusion of BMPs for the road construction to prevent erosion and sedimentation outside of the construction area. No change in direct wetland impacts is anticipated. Implementation of this sub-alternative would result in impacts equal to or greater than impacts identified for the proposed project for raptors and special-status wildlife species, including vernal pool fairy shrimp, VELB, California red-legged frog, Foothill yellow-legged frog, northwestern pond turtle, and Cooper's hawk.

No change in operation phase impacts from the proposed project is anticipated. Overall, the proposed project would be preferred over Sub-Alternative 5-1.

### **Cultural Resources**

Site DCN-33, one of the 17 potentially important stationary milling stations, is located approximately 100 feet west of Clark Tunnel Road in the northern portion of the project area. With this sub-alternative, it appears that impacts to site DCN-13 could occur. Furthermore, no cultural resources inventory has been conducted on the portion of Clark Tunnel Road extending north from the project boundaries or on the adjoining section of SR 193. As such, there is the potential that unknown cultural resources located along this stretch of Clark Tunnel Road and SR 193 could be impacted with this sub-alternative.

Impacts to paleontological remains would likely increase with this particular sub-alternative as road construction within the Mehrten lahars increases the potential for encountering such resources. Only a small section of Clark Tunnel Road, however, traverses across the Mehrten lahars, thus the potential for impacts to paleontological resources is minimal. There is no clear preference between the proposed project and Sub-Alternative 5-1.

### **Visual Quality**

There is typically little traffic along Clark Tunnel Road through the project site. The proposed project would generate additional traffic volumes on this and other local roads. Sub-Alternative 5-1 would result in slightly increased traffic volumes on Clark Tunnel Road and English Colony Way, and slightly decreased concentrations along Sierra College Boulevard. The presence of vehicles on the road would result in contrast primarily due to color, reflection, headlights, and movement of the vehicles. Traffic related contrast would be strongest within rural settings with a sense of seclusion. The Penryn community, along Clark Tunnel Road and English Colony Way to the south of the proposed project, is slightly more sensitive to increased traffic volumes than dispersed rural residential development to the north and west of the project site. Viewers to the northwest portion of the project site are already adjacent

to two relatively heavily traveled roadways. More residential development exists along Clark Tunnel Road and English Colony Way than exists along Sierra College Blvd and SR 193 in the vicinity of the project site. Residences along English Colony Way and Clark Tunnel Road vary in their setback from the road; however, many are in close proximity. Increased traffic volumes associated with this sub-alternative would be more likely to affect sensitive viewers. The proposed project would be preferred over Sub-Alternative 5-1.

### **Sub-Alternative 5-2: Retain Vehicular Access to Penryn**

In Sub-Alternative 5-2, Clark Tunnel Road would be closed at SR 193, but would remain open at the southeast portion of the project site, with direct access to the Penryn community. Minor improvements would be necessary to transition South Bickford Ranch Road into Clark Tunnel Road. As for the proposed project, a gate would be erected at SR 193, with the existing road remaining intact into the proposed project. This would provide access for one existing house using Clark Tunnel Road for primary access, and access for one lot in the proposed project. The roadway in this location would also be used as a hiking/equestrian trail, and for emergency vehicular access. As for Sub-Alternative 5-1, Clark Tunnel Road south of the project site would remain at its existing grades and configuration, because improvements to accommodate substantially increased traffic would not be economically feasible.

Environmental impacts associated with Sub-Alternative 5-2 are qualitatively analyzed below.

#### **Land Use**

This roadway access sub-alternative would not create significant land use impacts. Impacts associated with intensified use of the roadways to and from the site are identified in the traffic/circulation discussion of this alternative. With regard to land use there is no preference between the proposed project and Sub-Alternative 5-2.

#### **Population and Housing**

This sub-alternative would have no significant impact on population, employment or housing. There is no preference between the proposed project and Sub-Alternative 5-2.

#### **Public Services and Utilities**

**Water:** Sub-Alternative 5-2 would have the same impacts as the proposed project in terms of impacts to water supply, treatment, and conveyance systems. There is no preference between the proposed project and Sub-Alternative 5-2.

**Wastewater:** Impacts related to wastewater conveyance and treatment would be the same as identified for the proposed project. There is no preference between the proposed project and Sub-Alternative 5-2.

**Electricity/Gas/Energy:** Impacts related to electricity, gas, and energy would be the same under this sub-alternative as the proposed project. There is no preference between the proposed project and Sub-Alternative 5-2.

**Parks and Recreation:** There would be no difference between the proposed project and this sub-alternative in terms of park and recreation facilities. There is no preference between the proposed project and Sub-Alternative 5-2.

**Other County/Community Services:** Because there would be no change in the number of residents, there would be no difference in impacts for other County or community services. There is no preference between the proposed project and Sub-Alternative 5-2.

### **Traffic and Circulation (Quantitative Analysis)**

The trip generation under Sub-Alternative 5-2 would be the same as the proposed project (see table 7-6). In this sub-alternative, Clark Tunnel Road would be closed at SR 193, but the project site would have access to the Penryn community via Clark Tunnel Road.

Tables 16-31, 16-32, and 16-33 show roadway segment level of service analyses (based on daily traffic volumes) for Existing Plus Sub-Alternative 5-2, 2010 General Plan Plus Sub-Alternative 5-2 and Buildout of Project Vicinity Plus Sub-Alternative 5-2, respectively. The roadway segment impacts under Sub-Alternative 5-2 would differ from impacts of the proposed project in the following ways:

- Under Existing Plus Sub-Alternative 5-2 conditions, Sierra College Boulevard between Bickford Ranch Road and King Road would operate at LOS “C.” The proposed project would cause this section of roadway to operate at LOS “D” under this scenario.
- This sub-alternative would increase traffic on Clark Tunnel Road under all three development scenarios. While Clark Tunnel Road would operate at an acceptable level of service under each scenario, substantial improvements along Clark Tunnel Road (such as lengthening vertical and horizontal curves, improvements to sight distances and increasing lane widths) would be required due to safety issues posed by increased traffic volumes.

Tables 16-34, 16-35, and 16-36 show the intersection level of service analyses for the Existing Plus Sub-Alternative 5-2, 2010 General Plan Plus Sub-Alternative 5-2 and Buildout of Project Vicinity Plus Sub-Alternative 5-2, respectively. The intersection impacts under Sub-Alternative 5-2 would differ from the impacts of the proposed project in the following way:

- Under Existing Plus Sub-Alternative 5-2 conditions, the westbound stop-sign controlled approach of King Road at Sierra College Boulevard would operate at LOS “C.” The proposed project under this scenario would cause the westbound approach to worsen to LOS “D” during the p.m. peak hour.

Sub-Alternative 5-2 would have about the same impacts on transit services and bikeways as the proposed project.

Because the safety issues posed by increased traffic volumes on Clark Tunnel Road outweigh potential traffic flow improvements on Sierra College Boulevard and King Road, the proposed project would be preferred over Sub-Alternative 5-2.

**Table 16-31**  
**Roadway Segment Levels of Service**  
**Existing Plus Sub-Alternative 5-2 (Retain Access to Penryn)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-2	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	2	4,880	A	7,880	A
	Twelve Bridges to Bickford Ranch Rd	2	5,600	A	8,060	A
	Bickford Ranch Rd to English Colony	2	5,600	A	14,200	C
	English Colony to King Road	2	5,780	A	14,050	C
	King Road to Taylor Road	2	6,100	A	13,950	C
	Taylor Road to Granite	2	10,200	A	16,700	E
	Granite to I-80	2	14,770	D	21,140	F
SR 193	SR 65 to Lincoln City Limits	2	6,700	A	7,700	A
	Lincoln City Limits to Sierra College	2	6,500	A	8,630	A
	Sierra College to Clark Tunnel	2	5,000	A	5,880	A
	Clark Tunnel to Newcastle	2	4,400	A	5,280	A
I-80	West of Sierra College Blvd	6	87,000	D	92,000	D
	East of SR 193	6	80,000	D	81,250	D
Lower Ranch Rd.	East of Sierra College	2	-		1,180	A
Bickford Ranch Rd.	East of Sierra College	2	-		10,410	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	240	A	1,140	A
English Colony Rd	Sierra College to Clark Tunnel	2	870	A	1,190	A
	Clark Tunnel to Taylor	2	2,530	A	3,760	A

Source: DKS Associates, 1999.



**Table 16-32**  
**Roadway Segment Levels of Service**  
**2010 General Plan Plus Sub-Alternative 5-2 (Retain Access to Penryn)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-2	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	12,690	A	16,260	A
	Twelve Bridges to Bickford Ranch Rd	4	15,220	A	18,880	A
	Bickford Ranch Rd to English Colony	4	15,220	A	22,550	B
	English Colony to King Road	4	13,990	A	20,220	A
	King Road to Taylor Road	4	15,970	A	21,600	B
	Taylor Road to Granite	4	29,200	D	34,070	E
	Granite to I-80	6	30,970	A	35,350	B
SR 193	SR 65 to Lincoln City Limits	4	12,120	A	13,740	A
	Lincoln City Limits to Sierra College	4	19,550	A	22,680	B
	Sierra College to Clark Tunnel	2	13,430	C	14,060	C
	Clark Tunnel to Newcastle	2	9,300	A	9,920	A
I-80	West of Sierra College Blvd	6	110,000	F	113,500	F
	East of SR 193	6	100,000	F	100,750	F
Lower Ranch Rd.	East of Sierra College	2	-	A	1,390	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	10,440	A
12 Bridges Rd.	West of Sierra College	4	2,560	A	3,310	A
Clover Valley Rd.	West of Sierra College	2	2,820	A	3,700	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	460	A	1,130	A
English Colony Rd	Sierra College to Clark Tunnel	2	3,200	A	3,430	A
	Clark Tunnel to Taylor	2	4,770	A	5,670	A

Source: DKS Associates, 1999.

**Table 16-33**  
**Roadway Segment Levels of Service**  
**Buildout of Project Vicinity Plus Sub-Alternative 5-2 (Retain Access to Penryn)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-2	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	14,600	A	17,850	A
	Twelve Bridges to Bickford Ranch Rd	4	27,360	C	31,600	D
	Bickford Ranch Rd to English Colony	4	27,360	C	34,270	E
	English Colony to King Road	4	23,780	B	29,510	D
	King Road to Taylor Road	4	23,800	B	28,940	D
	Taylor Road to Granite	4	35,190	E	39,690	F
	Granite to I-80	6	34,710	B	38,710	C
SR 193	SR 65 to Lincoln City Limits	4	12,290	A	13,660	A
	Lincoln City Limits to Sierra College	4	21,870	B	24,620	B
	Sierra College to Clark Tunnel	2	14,600	D	15,100	D
	Clark Tunnel to Newcastle	2	9,930	A	10,430	A
I-80	West of Sierra College Blvd	6	111,420	F	113,500	F
	East of SR 193	6	100,700	F	100,750	F
Lower Ranch Road	East of Sierra College	2	-	A	1,270	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	10,640	A
12 Bridges Rd.	West of Sierra College	4	15,710	A	17,460	A
Clover Valley Rd.	West of Sierra College	2	6,640	A	7,640	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	460	A	1,050	A
English Colony Rd	Sierra College to Clark Tunnel	2	5,430	A	5,610	A
	Clark Tunnel to Taylor	2	6,480	A	7,260	A

Source: DKS Associates, 1999.

**Table 16-34**  
**Intersection Levels of Service, Existing Plus Sub-Alternative 5-2 (Retain Access to Penryn)**

Intersection		Control Type	No Project				Plus Sub-Alternative 5-2			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
<b>SR 193</b>	<b>SR 65</b>	Signal	<b>A</b>	0.507 V/C	<b>A</b>	0.580 V/C	<b>A</b>	0.526 V/C	<b>B</b>	0.617 V/C
<b>Sierra College</b>	<b>SR 193</b>	Stop	<b>A</b>	2.1 sec	<b>A</b>	3.1 sec	<b>A</b>	3.8 sec	<b>A</b>	4.3 sec
	<i>NB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.8 sec	<b>C</b>	9.8 sec	<b>C</b>	9.4 sec
	<i>SB Left</i>		<b>B</b>	6.6 sec	<b>A</b>	3.1 sec	<b>B</b>	7.5 sec	<b>B</b>	7.9 sec
<b>SR 193</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	<i>NB Approach</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	<i>WB Left</i>		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Lower Ranch Road</b>	Stop	<b>N/A</b>		<b>N/A</b>		<b>A</b>	0.6	<b>A</b>	0.5
	<i>SB Left</i>						<b>A</b>	2.8	<b>A</b>	3.5
	<i>WB Approach</i>						<b>B</b>	5.5	<b>B</b>	5.9
<b>Sierra College</b>	<b>Twelve Bridges Drive</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec	<b>A</b>	0.2 sec	<b>A</b>	0.4 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec	<b>A</b>	2.6 sec	<b>A</b>	3.5 sec	<b>A</b>	2.9 sec
	<i>EB Approach</i>		<b>A</b>	4.0 sec	<b>A</b>	4.3 sec	<b>A</b>	4.4 sec	<b>B</b>	5.2 sec
<b>Sierra College</b>	<b>Bickford Ranch Road</b>	Signal	<b>N/A</b>		<b>N/A</b>		<b>B</b>	0.547 V/C	<b>A</b>	0.526 V/C
<b>Sierra College</b>	<b>English Colony Way</b>	Stop	<b>A</b>	0.2 sec	<b>A</b>	0.2 sec	<b>A</b>	0.3 sec	<b>A</b>	0.3 sec
	<i>SB Left</i>		<b>A</b>	2.5 sec	<b>A</b>	3.0 sec	<b>A</b>	3.2 sec	<b>A</b>	4.9 sec
	<i>WB Approach</i>		<b>A</b>	4.4 sec	<b>A</b>	4.9 sec	<b>B</b>	7.0 sec	<b>B</b>	8.1 sec
<b>Sierra College</b>	<b>Clover Valley Road</b>	Stop	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Del Mar Avenue</b>	Stop	<b>A</b>	0.8 sec	<b>A</b>	0.6 sec	<b>A</b>	1.0 sec	<b>A</b>	0.7 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec		sec	<b>B</b>	5.1 sec		sec
	<i>SB Left</i>				<b>A</b>	3.0			<b>A</b>	4.9
	<i>EB Approach</i>		<b>B</b>	6.9 sec	<b>B</b>	6.6 sec	<b>C</b>	16.2 sec	<b>C</b>	16.5 sec
	<i>WB Approach</i>		<b>B</b>	7.3 sec	<b>B</b>	6.6 sec	<b>C</b>	18.3 sec	<b>C</b>	16.5 sec
<b>Sierra College</b>	<b>King Road</b>	Stop	<b>A</b>	0.9 sec	<b>A</b>	1.2 sec	<b>A</b>	0.9 sec	<b>A</b>	1.5 sec
	<i>NB Left</i>		<b>A</b>	2.8 sec	<b>A</b>	2.6 sec	<b>A</b>	4.4 sec	<b>A</b>	3.4 sec
	<i>SB Left</i>		<b>A</b>	2.6 sec	<b>A</b>	3.1 sec	<b>A</b>	3.3 sec	<b>B</b>	5.1 sec
	<i>EB Approach</i>		<b>B</b>	5.2 sec	<b>B</b>	7.4 sec	<b>C</b>	11.1 sec	<b>C</b>	19.6 sec
	<i>WB Approach</i>		<b>A</b>	4.8 sec	<b>A</b>	5.0 sec	<b>B</b>	8.5 sec	<b>B</b>	9.7 sec
<b>Sierra College</b>	<b>Taylor Road</b>	Signal	<b>A</b>	0.443 V/C	<b>A</b>	0.489 V/C	<b>B</b>	0.663 V/C	<b>C</b>	0.722 V/C
<b>Sierra College</b>	<b>Granite Drive</b>	Signal	<b>A</b>	0.472 V/C	<b>B</b>	0.681 V/C	<b>B</b>	0.699 V/C	<b>E</b>	0.928 V/C
<b>Sierra College</b>	<b>I-80 WB Ramps</b>	Signal	<b>C</b>	0.753 V/C	<b>C</b>	0.798 V/C	<b>D</b>	0.898 V/C	<b>F</b>	1.039 V/C
<b>Sierra College</b>	<b>I-80 EB Ramps</b>	Signal	<b>C</b>	0.762 V/C	<b>D</b>	0.881 V/C	<b>E</b>	0.948 V/C	<b>F</b>	1.100 V/C
<b>English Colony Way</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.6 sec	<b>A</b>	0.5 sec	<b>A</b>	1.2 sec	<b>A</b>	0.8 sec
	<i>SB Approach</i>		<b>A</b>	4.6 sec	<b>A</b>	4.4 sec	<b>B</b>	5.6 sec	<b>B</b>	5.2 sec
	<i>EB Left</i>		<b>A</b>	2.4 sec	<b>A</b>	2.5 sec	<b>A</b>	2.5 sec	<b>A</b>	2.6 sec
<b>English Colony Way</b>	<b>Taylor Road</b>	Stop	<b>B</b>	6.4 sec	<b>D</b>	11.6 sec	<b>B</b>	9.3 sec	<b>C</b>	12.8 sec

Source: DKS Associates, 1999.

**Table 16-35**  
**Intersection Levels of Service, 2010 General Plan Plus Sub-Alternative 5-2 (Retain Access to Penryn)**

Intersection		Control Type	No Project				Plus Sub-Alternative 5-2			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.948 V/C	F	1.158 V/C	E	0.985 V/C	F	1.199 V/C
Sierra College	SR 193	Signal	B	0.645 V/C	C	0.722 V/C	C	0.733 V/C	C	0.782 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 sec
	NB Approach		A	3.5 sec	A	0.0 sec	A	3.6 sec	A	0.0 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	0.0 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.8 sec	A	0.5 sec
	SB Left						B	4.9 sec	B	5.4 sec
	WB left						E	31.2 sec	E	33.6 sec
Sierra College	Twelve Bridges Drive	Signal	A	0.404 V/C	A	0.381 V/C	A	0.460 V/C	A	0.458 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		A	0.488 V/C	A	0.450 V/C
Sierra College	English Colony Way	Signal	A	0.380 V/C	A	0.364 V/C	A	0.472 V/C	A	0.498 V/C
Sierra College	Clover Valley Road	Signal	A	0.300 V/C	A	0.252 V/C	A	0.427 V/C	A	0.398 V/C
Sierra College	Del Mar Avenue	Stop	A	1.5 sec	A	0.9 sec	A	3.5 sec	A	2.0 sec
	NB Left		A	4.9 sec		sec	B	7.2 sec		sec
	SB Left		A	4.8 sec	A	4.5 sec	B	5.8 sec	B	6.7 sec
	EB Approach		D	25.0 sec	D	23.4 sec	F	61.3 sec	F	65.6 sec
	WB Approach		E	30.0 sec	D	23.4 sec	F	92.5 sec	F	55.5 sec
Sierra College	King Road	Signal	A	0.404 V/C	A	0.443 V/C	A	0.477 V/C	A	0.575 V/C
Sierra College	Taylor Road	Signal	D	0.880 V/C	D	0.878 V/C	E	0.971 V/C	E	0.932 V/C
Sierra College	Granite Drive	Signal	B	0.628 V/C	C	0.743 V/C	B	0.673 V/C	D	0.803 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.745 V/C	C	0.733 V/C	C	0.789 V/C	D	0.809 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.634 V/C	B	0.619 V/C	B	0.648 V/C	B	0.695 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.7 sec	A	0.5 sec	A	1.1 sec	A	0.7 sec
	SB Approach		B	6.0 sec	B	5.8 sec	B	7.3 sec	B	6.7 sec
	EB Left		A	3.0 sec	A	2.6 sec	A	3.1 sec	A	2.8 sec
English Colony Way	Taylor Road	Signal	B	0.670 V/C	C	0.788 V/C	C	0.716 V/C	D	0.807 V/C

Source: DKS Associates, 1999.

**Table 16-36**  
**Intersection Levels of Service, Buildout of Project Vicinity Plus Sub-Alternative 5-2 (Retain Access to Penryn)**

Intersection		Control Type	No Project				Plus Sub-Alternative 5-2			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.991 V/C	F	1.189 V/C	F	1.020 V/C	F	1.226 V/C
SR 193	Ferrari Ranch Road	Signal	B	0.646 V/C	C	0.797 V/C	B	0.695 V/C	D	0.847 V/C
Sierra College	SR 193	Signal	D	0.897 V/C	E	0.902 V/C	C	0.761 V/C	D	0.821 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 sec
	NB Approach		B	9.9 sec	C	11.0 sec	C	10.4 sec	C	11.7 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	0.0 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.8 sec	A	0.5 sec
	SB Left						B	5.5 sec	B	5.3 sec
	WB left						E	36.3 sec	E	37.6 sec
Sierra College	Twelve Bridges Drive	Signal	C	0.722 V/C	C	0.786 V/C	C	0.795 V/C	D	0.870 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		B	0.629 V/C	C	0.709 V/C
Sierra College	English Colony Way	Signal	A	0.516 V/C	A	0.591 V/C	A	0.579 V/C	C	0.718 V/C
Sierra College	Clover Valley Road	Signal	A	0.588 V/C	A	0.469 V/C	C	0.708 V/C	B	0.610 V/C
Sierra College	Del Mar Avenue	Stop	C	11.1 sec	A	2.8 sec	E	40.4 sec	C	16.2 sec
	NB Left		B	9.6 sec		sec	C	13.7 sec		sec
	SB Left		B	6.9 sec	B	8.9 sec	B	8.2 sec	C	12.7 sec
	EB Approach		F	115.0 sec	F	112.8 sec	F	>180 sec	F	>180 sec
	WB Approach		F	>180 sec	F	108.0 sec	F	>180 sec	F	>180 sec
Sierra College	King Road	Signal	A	0.565 V/C	C	0.710 V/C	B	0.650 V/C	D	0.833 V/C
Sierra College	Taylor Road	Signal	E	0.990 V/C	E	0.928 V/C	F	1.073 V/C	F	1.013 V/C
Sierra College	Granite Drive	Signal	B	0.682 V/C	D	0.805 V/C	C	0.760 V/C	D	0.860 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.792 V/C	D	0.818 V/C	D	0.834 V/C	D	0.894 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.696 V/C	C	0.736 V/C	C	0.709 V/C	D	0.805 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.6 sec	A	0.4 sec	A	1.1 sec	A	0.7 sec
	SB Approach		B	7.3 sec	B	7.7 sec	B	8.9 sec	B	8.3 sec
	EB Left		A	3.1 sec	A	3.1 sec	A	3.1 sec	A	3.2 sec
English Colony Way	Taylor Road	Signal	C	0.750 V/C	D	0.801 V/C	C	0.789 V/C	D	0.818 V/C

Source: DKS Associates, 1999.

**Air Quality**

Construction impacts associated with this sub-alternative would be slightly greater than with the proposed project, since this sub-alternative would entail some construction of improvements to Clark Tunnel Road. No additional vehicle trips would be generated by this sub-alternative, however proposed project generated trips would be redistributed on the roadway network. The traffic analysis showed that the LOS would decline at some affected intersections, reducing air pollutant emission and increase at others, increasing air emissions. In general, the alternative route could lead to an overall decrease in regional emissions by decreasing VMT. Because with this sub-alternative vehicle volumes on Clark Tunnel Road and English Colony Way would increase slightly, roadside pollutant concentrations along those roadways would increase over concentrations associated with the proposed project. Decreases in vehicle volumes along other roadways, such as Sierra College Boulevard, would decrease pollutant concentrations along those roadways. More residential land uses are located along English Colony Way, however, than along Sierra College Boulevard, therefore increased pollutant concentrations associated with this sub-alternative would be more likely to affect residential receivers. There is no preference between the proposed project and Sub-Alternative 5-2 with respect to air quality.

**Noise**

Construction noise impacts associated with Sub-Alternative 5-2 would be slightly greater than with the proposed project because improvements to Clark Tunnel Road would be constructed. As stated above, the effect of Sub-Alternative 5-2 would be to redistribute existing trips as opposed to generating additional vehicle trips. This vehicle volume redistribution would generate higher noise levels along Clark Tunnel Road and English Colony Way, and slightly lower noise levels along other affected roadways. Because of the presence of noise-sensitive receivers along English Colony Way and because of their proximity to the roadway, slight traffic volume increases along this roadway would be more likely to affect sensitive receivers than along other roadways. The proposed project would thus be preferred over Sub-Alternative 5-2 with respect to noise impacts.

**Soils, Geology, and Seismicity**

Because of the slight improvements necessary to Clark Tunnel Road under Sub-Alternative 5-2, potential for soil erosion, topographic alteration and slope instability would be insignificant. There is no preference between the proposed project and Sub-Alternative 5-2.

**Hazardous Waste/Materials**

Since construction activity would be slightly increased as a result of the improvements to Clark Tunnel Road under Sub-Alternative 5-2, there would be slightly greater potential for the release of hazardous materials during construction. Impacts could be mitigated through mitigation measures described for the proposed project. Therefore, there would be no preference between the proposed project and Sub-Alternative 5-2.

**Hydrology and Water Quality**

No impacts to hydrology or groundwater resources are anticipated from Sub-Alternative 5-2. Impacts to surface water quality would be essentially the same as those of the proposed project, with the exception of slightly increased potential for erosion and resultant increases in runoff sediment content during construction of roadway improvements. However, the erosion control mitigation measures described for the proposed project could be designed to reduce the level of impact to less than significant. There is no clear preference between this sub-alternative and the proposed project.

### **Biology**

Loss of protected trees because of construction within this sub-alternative project area would not significantly change compared with the proposed project. The additional number of affected trees would not exceed approximately 15 protected trees.

Construction impacts on riparian vegetation along Clover Valley Creek and other drainages would not differ from the proposed project. There would be no significant increase in construction impacts on special-status plant habitat in the oak woodland. Indirect construction impacts on wetlands and other waters of the United States would not likely increase. No change in direct wetland impacts is anticipated. Implementation of this sub-alternative would result in impacts equal to impacts identified for the proposed project for raptors and special-status wildlife species, including vernal pool fairy shrimp, VELB, California red-legged frog, Foothill yellow-legged frog, northwestern pond turtle, and Cooper's hawk.

No change in operation phase impacts from the proposed project is anticipated. There is no clear preference between the proposed project and Sub-Alternative 5-2.

### **Cultural Resources**

No additional impacts to known cultural or paleontological resources would occur with the implementation of this sub-alternative. There is no preference between the proposed project and Sub-Alternative 5-2.

### **Visual Quality**

The implementation of Sub-Alternative 5-2 would result in greater traffic volumes on Clark Tunnel Road and English Colony Way, and slightly lower traffic volumes along Sierra College Boulevard. Due to the presence of sensitive viewers along English Colony Way, their proximity to the roadway, and their currently secluded setting, slight volume increases are more likely to affect these viewers than those along Sierra College Boulevard. The proposed project would be slightly preferred over Sub-Alternative 5-2.

### **Sub-Alternative 5-3: Retain Vehicular Access to SR 193**

In this sub-alternative, Clark Tunnel Road would remain open at SR 193, but would be closed at the southeast portion of the project site. As under Sub-Alternative 5-1, improvements would be needed at the intersection of Clark Tunnel Road and SR 193 to improve line-of-sight and safety concerns associated with turning into and out of the project site, where a sharp curve in the roadway combined with the steep alignment in this area and 50 mph speeds would require substantial improvements to maintain safety. The improvements to Clark Tunnel Road from SR 193 to its intersection with the proposed Bickford Ranch Road would also be constructed (Figure 16-4) in this sub-alternative. Clark Tunnel Road would be closed at its intersection with the project's southeastern boundary. Where Clark Tunnel Road enters the southern site boundary after a steep switchback turn as it comes up the hill, a turnabout would be constructed inside the project boundary to enable vehicles to turn around. The four existing houses nearest to Bickford Ranch and fronting on Clark Tunnel Road would continue to have direct access via Clark Tunnel Road's current configuration as a country road. The property owner directly adjacent to the project boundary would be provided with access and utility easements to Bickford Ranch. Dead end signs would be posted at the bottom of the hill leading up to Bickford Ranch and at the turnabout. Emergency access to the project site from Clark Tunnel Road to South Bickford Ranch Road would be retained.

Environmental impacts associated with Sub-Alternative 5-3 are qualitatively analyzed below.

## Land Use

This roadway access sub-alternative would not create significant land use impacts. Impacts associated with intensified use of the roadways to and from the site are identified in the traffic/circulation discussion of this sub-alternative. With regard to land use, there is no preference between the proposed project and Sub-Alternative 5-3.

## Population and Housing

This sub-alternative would have no significant impact on population, employment or housing. There is no preference between the proposed project and Sub-Alternative 5-3.

## Public Services and Utilities

**Water:** Sub-Alternative 5-3 would have the same impacts as the proposed project in terms of impacts to water supply, treatment, and conveyance systems. There is no preference between the proposed project and Sub-Alternative 5-3.

**Wastewater:** Impacts related to wastewater conveyance and treatment would be the same as those identified for the proposed project. There is no preference between the proposed project and Sub-Alternative 5-3.

**Electricity/Gas/Energy:** Impacts related to electricity and energy would be the same as the proposed project. There is no preference between the proposed project and Sub-Alternative 5-3.

**Parks and Recreation:** There would be no difference between the proposed project and this sub-alternative in terms of park and recreation facilities. There is no preference between the proposed project and Sub-Alternative 5-3.

**Other County/Community Services:** Because there would be no change in the number of residents, there would be no difference in impacts for other County and community services. There is no preference between the proposed project and Sub-Alternative 5-3.

## Traffic and Circulation (Quantitative Analysis)

The trip generation under Sub-Alternative 5-3 would be the same as the proposed project (see Table 7-6). In this sub-alternative, Clark Tunnel Road would be closed at the southeast portion of the project site. The project site would have access to SR 193 via Clark Tunnel Road.

Tables 16-37, 16-38, and 16-39 show roadway segment level of service analyses (based on daily traffic volumes) for Existing Plus Sub-Alternative 5-3, 2010 General Plan Plus Sub-Alternative 5-3, and Buildout of Project Vicinity Plus Sub-Alternative 5-3, respectively. The roadway segment impacts under Sub-Alternative 5-3 would differ from impacts of the proposed project in the following ways:

- Sub-Alternative 5-3 would cause the section of SR 193 between Sierra College Boulevard and Clark Tunnel Road to operate at LOS “D” under the 2010 General Plan, while the proposed project would operate at LOS “C” conditions under this scenario. LOS “D” conditions are acceptable on a state highway.
- This sub-alternative would increase traffic on Clark Tunnel Road under all three development scenarios. While Clark Tunnel Road would operate at an acceptable level of service under each scenario, substantial improvements along Clark Tunnel Road would be required due to safety issues posed by increased traffic volumes.



Tables 16-40, 16-41, and 16-42 show the intersection level of service analyses for the Existing Plus Sub-Alternative 5-3, 2010 General Plan Plus Sub-Alternative 5-3, and Buildout of Project Vicinity Plus Sub-Alternative 5-3, respectively. The intersection impacts under Sub-Alternative 5-3 would differ from the impacts of the proposed project in the following ways:

- Under 2010 General Plan conditions, Sub-Alternative 5-3 would cause the intersection of Sierra College Boulevard and SR 193 to operate at LOS “D” during the p.m. peak hour, while it would operate at LOS “C” conditions under the proposed project.
- Under both the 2010 General Plan Plus Sub-Alternative 5-3 and Buildout of Project Vicinity Plus Sub-Alternative 5-3, the westbound stop-sign controlled approach of Lower Ranch Road at Sierra College Boulevard would operate at LOS “D.” This roadway approach would operate at LOS “E” with the proposed project under these two development scenarios.

Sub-Alternative 5-3 would have about the same impacts on transit services and bikeways as the proposed project. The proposed project would be preferred over Sub-Alternative 5-3.

**Table 16-37**  
**Roadway Segment Levels of Service**  
**Existing Plus Sub-Alternative 5-3 (Retain Access to SR 193)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-3	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	2	4,880	A	6,170	A
	Twelve Bridges to Bickford Ranch Rd	2	5,600	A	6,770	A
	Bickford Ranch Rd to English Colony	2	5,600	A	15,100	D
	English Colony to King Road	2	5,780	A	14,410	D
	King Road to Taylor Road	2	6,100	A	14,100	C
	Taylor Road to Granite	2	10,200	A	16,700	E
	Granite to I-80	2	14,770	D	21,140	F
SR 193	SR 65 to Lincoln City Limits	2	6,700	A	7,700	A
	Lincoln City Limits to Sierra College	2	6,500	A	8,630	A
	Sierra College to Clark Tunnel	2	5,000	A	6,180	A
	Clark Tunnel to Newcastle	2	4,400	A	5,270	A
I-80	West of Sierra College Blvd	6	87,000	D	92,000	D
	East of SR 193	6	80,000	D	81,250	D
Lower Ranch Rd.	East of Sierra College	2	-		770	A
Bickford Ranch Rd.	East of Sierra College	2	-		10,000	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	1,760	A
	Callison Rd To English Colony	2	240	A	240	A
English Colony Rd	Sierra College to Clark Tunnel	2	870	A	1,750	A
	Clark Tunnel to Taylor	2	2,530	A	3,400	A

Source: DKS Associates, 1999.

**Table 16-38**  
**Roadway Segment Levels of Service**  
**2010 General Plan Plus Sub-Alternative 5-3 (Retain Access to SR 193)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-3	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	12,690	A	14,460	A
	Twelve Bridges to Bickford Ranch Rd	4	15,220	A	17,380	A
	Bickford Ranch Rd to English Colony	4	15,220	A	23,220	B
	English Colony to King Road	4	13,990	A	20,490	A
	King Road to Taylor Road	4	15,970	A	21,720	B
	Taylor Road to Granite	4	29,200	D	34,070	E
	Granite to I-80	6	30,970	A	35,350	B
SR 193	SR 65 to Lincoln City Limits	4	12,120	A	13,740	A
	Lincoln City Limits to Sierra College	4	19,550	A	22,680	B
	Sierra College to Clark Tunnel	2	13,430	C	15,030	D
	Clark Tunnel to Newcastle	2	9,300	A	9,920	A
I-80	West of Sierra College Blvd	6	110,000	F	113,500	F
	East of SR 193	6	100,000	F	100,750	F
Lower Ranch Rd.	East of Sierra College	2	-	A	910	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	9,610	A
12 Bridges Rd.	West of Sierra College	4	2,560	A	3,310	A
Clover Valley Rd.	West of Sierra College	2	2,820	A	3,700	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	2,130	A
	Callison Rd To English Colony	2	460	A	460	A
English Colony Rd	Sierra College to Clark Tunnel	2	3,200	A	3,830	A
	Clark Tunnel to Taylor	2	4,770	A	5,400	A

Source: DKS Associates, 1999.

**Table 16-39**  
**Roadway Segment Levels of Service**  
**Buildout of Project Vicinity Plus Sub-Alternative 5-3 (Retain Access to SR 193)**

Roadway	Segment	No. of Lanes	No Project		Sub-Alternative 5-3	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	14,600	A	16,140	A
	Twelve Bridges to Bickford Ranch Rd	4	27,360	C	30,310	D
	Bickford Ranch Rd to English Colony	4	27,360	C	34,860	E
	English Colony to King Road	4	23,780	B	29,780	D
	King Road to Taylor Road	4	23,800	B	29,060	D
	Taylor Road to Granite	4	35,190	E	39,690	F
	Granite to I-80	6	34,710	B	38,710	C
SR 193	SR 65 to Lincoln City Limits	4	12,290	A	13,660	A
	Lincoln City Limits to Sierra College	4	21,870	B	24,620	B
	Sierra College to Clark Tunnel	2	14,600	D	16,000	D
	Clark Tunnel to Newcastle	2	9,930	A	10,430	A
I-80	West of Sierra College Blvd	6	111,420	F	113,500	F
	East of SR 193	6	100,700	F	100,750	F
Lower Ranch Road	East of Sierra College	2	-	A	860	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	9,940	A
12 Bridges Rd.	West of Sierra College	4	15,710	A	17,460	A
Clover Valley Rd.	West of Sierra College	2	6,640	A	7,640	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	1,750	A
	Callison Rd To English Colony	2	460	A	460	A
English Colony Rd	Sierra College to Clark Tunnel	2	5,430	A	5,930	A
	Clark Tunnel to Taylor	2	6,480	A	6,980	A

Source: DKS Associates, 1999.

**Table 16-40**  
**Intersection Levels of Service, Existing Plus Sub-Alternative 5-3 (Retain Access to SR 193)**

Intersection		Control Type	No Project						Plus Sub-Alternative 5-3					
			A.M.			P.M.			A.M.			P.M.		
			LOS	LOS Criteria		LOS	LOS Criteria		LOS	LOS Criteria		LOS	LOS Criteria	
<b>SR 193</b>	<b>SR 65</b>	Signal	<b>A</b>	0.507	V/C	<b>A</b>	0.580	V/C	<b>A</b>	0.526	V/C	<b>B</b>	0.617	V/C
<b>Sierra College</b>	<b>SR 193</b>	Stop	<b>A</b>	2.1	sec	<b>A</b>	3.1	sec	<b>A</b>	3.0	sec	<b>A</b>	3.8	sec
	<i>NB Approach</i>		<b>B</b>	7.3	sec	<b>B</b>	6.8	sec	<b>B</b>	9.9	sec	<b>C</b>	9.2	sec
	<i>SB Left</i>		<b>B</b>	6.6	sec	<b>A</b>	3.1	sec	<b>B</b>	7.6	sec	<b>B</b>	7.9	sec
<b>SR 193</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.0	sec	<b>A</b>	0.0	sec	<b>A</b>	1.2	sec	<b>A</b>	0.8	sec
	<i>NB Approach</i>		<b>A</b>	0.0	sec	<b>A</b>	0.0	sec	<b>A</b>	4.4	sec	<b>B</b>	5.1	sec
	<i>WB Left</i>		<b>A</b>	0.0	sec	<b>A</b>	0.0	sec	<b>A</b>	2.5	sec	<b>A</b>	2.8	sec
<b>Sierra College</b>	<b>Lower Ranch Road</b>	Stop	<b>N/A</b>			<b>N/A</b>			<b>A</b>	0.5		<b>A</b>	0.4	
	<i>SB Left</i>								<b>A</b>	2.6		<b>A</b>	3.3	
	<i>WB Approach</i>								<b>B</b>	5.4		<b>B</b>	5.8	
<b>Sierra College</b>	<b>Twelve Bridges Drive</b>	Stop	<b>A</b>	0.2	sec	<b>A</b>	0.4	sec	<b>A</b>	0.2	sec	<b>A</b>	0.4	sec
	<i>NB Left</i>		<b>A</b>	3.2	sec	<b>A</b>	2.6	sec	<b>A</b>	3.4	sec	<b>A</b>	2.7	sec
	<i>EB Approach</i>		<b>A</b>	4.0	sec	<b>A</b>	4.3	sec	<b>A</b>	4.2	sec	<b>A</b>	4.7	sec
<b>Sierra College</b>	<b>Bickford Ranch Road</b>	Signal	<b>N/A</b>			<b>N/A</b>			<b>A</b>	0.577	V/C	<b>A</b>	0.531	V/C
<b>Sierra College</b>	<b>English Colony Way</b>	Stop	<b>A</b>	0.2	sec	<b>A</b>	0.2	sec	<b>A</b>	0.4	sec	<b>A</b>	0.6	sec
	<i>SB Left</i>		<b>A</b>	2.5	sec	<b>A</b>	3.0	sec	<b>A</b>	3.3	sec	<b>B</b>	5.1	sec
	<i>WB Approach</i>		<b>A</b>	4.4	sec	<b>A</b>	4.9	sec	<b>B</b>	6.4	sec	<b>B</b>	7.9	sec
<b>Sierra College</b>	<b>Clover Valley Road</b>	Stop	<b>A</b>	0.0	sec	<b>A</b>	0.0	sec	<b>A</b>	0.0	sec	<b>A</b>	0.0	sec
<b>Sierra College</b>	<b>Del Mar Avenue</b>	Stop	<b>A</b>	0.8	sec	<b>A</b>	0.6	sec	<b>A</b>	1.0	sec	<b>A</b>	0.7	sec
	<i>NB Left</i>		<b>A</b>	3.2	sec			sec	<b>B</b>	5.2	sec			sec
	<i>SB Left</i>					<b>A</b>	3.0					<b>A</b>	4.9	
	<i>EB Approach</i>		<b>B</b>	6.9	sec	<b>B</b>	6.6	sec	<b>C</b>	16.8	sec	<b>C</b>	17.1	sec
	<i>WB Approach</i>		<b>B</b>	7.3	sec	<b>B</b>	6.6	sec	<b>C</b>	19.1	sec	<b>C</b>	17.2	sec
<b>Sierra College</b>	<b>King Road</b>	Stop	<b>A</b>	0.9	sec	<b>A</b>	1.2	sec	<b>A</b>	0.9	sec	<b>A</b>	1.6	sec
	<i>NB Left</i>		<b>A</b>	2.8	sec	<b>A</b>	2.6	sec	<b>A</b>	4.4	sec	<b>A</b>	3.4	sec
	<i>SB Left</i>		<b>A</b>	2.6	sec	<b>A</b>	3.1	sec	<b>A</b>	3.3	sec	<b>B</b>	5.1	sec
	<i>EB Approach</i>		<b>B</b>	5.2	sec	<b>B</b>	7.4	sec	<b>C</b>	11.5	sec	<b>D</b>	20.6	sec
	<i>WB Approach</i>		<b>A</b>	4.8	sec	<b>A</b>	5.0	sec	<b>B</b>	8.4	sec	<b>C</b>	9.9	sec
<b>Sierra College</b>	<b>Taylor Road</b>	Signal	<b>A</b>	0.443	V/C	<b>A</b>	0.489	V/C	<b>B</b>	0.663	V/C	<b>C</b>	0.725	V/C
<b>Sierra College</b>	<b>Granite Drive</b>	Signal	<b>A</b>	0.472	V/C	<b>B</b>	0.681	V/C	<b>B</b>	0.699	V/C	<b>E</b>	0.928	V/C
<b>Sierra College</b>	<b>I-80 WB Ramps</b>	Signal	<b>C</b>	0.753	V/C	<b>C</b>	0.798	V/C	<b>D</b>	0.898	V/C	<b>F</b>	1.039	V/C
<b>Sierra College</b>	<b>I-80 EB Ramps</b>	Signal	<b>C</b>	0.762	V/C	<b>D</b>	0.881	V/C	<b>E</b>	0.948	V/C	<b>F</b>	1.100	V/C
<b>English Colony Way</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.6	sec	<b>A</b>	0.5	sec	<b>A</b>	0.6	sec	<b>A</b>	0.4	sec
	<i>SB Approach</i>		<b>A</b>	4.6	sec	<b>A</b>	4.4	sec	<b>B</b>	5.0	sec	<b>A</b>	4.9	sec
	<i>EB Left</i>		<b>A</b>	2.4	sec	<b>A</b>	2.5	sec	<b>A</b>	2.5	sec	<b>A</b>	2.6	sec
<b>English Colony Way</b>	<b>Taylor Road</b>	Stop	<b>B</b>	6.4	sec	<b>D</b>	11.6	sec	<b>B</b>	7.8	sec	<b>C</b>	11.9	sec

Source: DKS Associates, 1999.

**Table 16-41**  
**Intersection Levels of Service, 2010 General Plan Plus Sub-Alternative 5-3 (Retain Access to SR 193)**

Intersection		Control Type	No Project				Plus Sub-Alternative 5-3			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.948 V/C	F	1.158 V/C	E	0.985 V/C	F	1.199 V/C
Sierra College	SR 193	Signal	B	0.645 V/C	C	0.722 V/C	C	0.730 V/C	D	0.800 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	1.3 sec	A	0.9 sec
	NB Approach		A	3.5 sec	A	0.0 sec	C	10.1 sec	C	11.8 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	4.3 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.6 sec	A	0.4 sec
	SB Left						A	4.4 sec	A	4.9 sec
	WB left						D	24.6 sec	D	25.3 sec
Sierra College	Twelve Bridges Drive	Signal	A	0.404 V/C	A	0.381 V/C	A	0.447 V/C	A	0.431 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		A	0.473 V/C	A	0.402 V/C
Sierra College	English Colony Way	Signal	A	0.380 V/C	A	0.364 V/C	A	0.469 V/C	A	0.512 V/C
Sierra College	Clover Valley Road	Signal	A	0.300 V/C	A	0.252 V/C	A	0.432 V/C	A	0.402 V/C
Sierra College	Del Mar Avenue	Stop	A	1.5 sec	A	0.9 sec	A	3.7 sec	A	2.1 sec
	NB Left		A	4.9 sec		sec	B	7.3 sec		sec
	SB Left		A	4.8 sec	A	4.5 sec	B	5.9 sec	B	6.8 sec
	EB Approach		D	25.0 sec	D	23.4 sec	F	64.0 sec	F	69.0 sec
	WB Approach		E	30.0 sec	D	23.4 sec	F	98.7 sec	F	57.9 sec
Sierra College	King Road	Signal	A	0.404 V/C	A	0.443 V/C	A	0.487 V/C	A	0.586 V/C
Sierra College	Taylor Road	Signal	D	0.880 V/C	D	0.878 V/C	E	0.971 V/C	E	0.932 V/C
Sierra College	Granite Drive	Signal	B	0.628 V/C	C	0.743 V/C	B	0.673 V/C	D	0.803 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.745 V/C	C	0.733 V/C	C	0.789 V/C	D	0.809 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.634 V/C	B	0.619 V/C	B	0.648 V/C	B	0.695 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.7 sec	A	0.5 sec	A	0.7 sec	A	0.5 sec
	SB Approach		B	6.0 sec	B	5.8 sec	B	6.3 sec	B	6.2 sec
	EB Left		A	3.0 sec	A	2.6 sec	A	3.0 sec	A	2.7 sec
English Colony Way	Taylor Road	Signal	B	0.670 V/C	C	0.788 V/C	C	0.701 V/C	D	0.801 V/C

Source: DKS Associates, 1999.

**Table 16-42**  
**Intersection Levels of Service, Buildout of Project Vicinity Plus Sub-Alternative 5-3 (Retain Access to SR 193)**

Intersection		Control Type	No Project				Plus Sub-Alternative 5-3			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.991 V/C	F	1.189 V/C	F	1.020 V/C	F	1.226 V/C
SR 193	Ferrari Ranch Road	Signal	B	0.646 V/C	C	0.797 V/C	B	0.695 V/C	D	0.847 V/C
Sierra College	SR 193	Signal	D	0.897 V/C	E	0.902 V/C	C	0.792 V/C	D	0.838 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	1.1 sec	A	0.8 sec
	NB Approach		B	9.9 sec	C	11.0 sec	C	10.8 sec	C	12.3 sec
	WB left		A	2.8 sec	A	0.0 sec	A	3.0 sec	A	4.3 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.7 sec	A	0.4 sec
	SB Left						B	5.0 sec	A	4.9 sec
	WB left						D	29.3 sec	D	29.4 sec
Sierra College	Twelve Bridges Drive	Signal	C	0.722 V/C	C	0.786 V/C	C	0.784 V/C	D	0.847 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		B	0.641 V/C	C	0.667 V/C
Sierra College	English Colony Way	Signal	A	0.516 V/C	A	0.591 V/C	A	0.585 V/C	C	0.729 V/C
Sierra College	Clover Valley Road	Signal	A	0.588 V/C	A	0.469 V/C	C	0.713 V/C	B	0.615 V/C
Sierra College	Del Mar Avenue	Stop	C	11.1 sec	A	2.8 sec	E	42.3 sec	C	17.3 sec
	NB Left		B	9.6 sec		sec	C	14.0 sec		sec
	SB Left		B	6.9 sec	B	8.9 sec	C	8.3 sec	C	13.0 sec
	EB Approach		F	115.0 sec	F	112.8 sec	F	>180 sec	F	>180 sec
	WB Approach		F	>180 sec	F	108.0 sec	F	>180 sec	F	>180 sec
Sierra College	King Road	Signal	A	0.565 V/C	C	0.710 V/C	B	0.655 V/C	D	0.844 V/C
Sierra College	Taylor Road	Signal	E	0.990 V/C	E	0.928 V/C	F	1.073 V/C	F	1.016 V/C
Sierra College	Granite Drive	Signal	B	0.682 V/C	D	0.805 V/C	C	0.760 V/C	D	0.860 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.792 V/C	D	0.818 V/C	D	0.834 V/C	D	0.894 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.696 V/C	C	0.736 V/C	C	0.709 V/C	D	0.805 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.6 sec	A	0.4 sec	A	0.6 sec	A	0.4 sec
	SB Approach		B	7.3 sec	B	7.7 sec	B	7.6 sec	B	7.7 sec
	EB Left		A	3.1 sec	A	3.1 sec	A	3.1 sec	A	3.1 sec
English Colony Way	Taylor Road	Signal	C	0.750 V/C	D	0.801 V/C	C	0.774 V/C	D	0.812 V/C

Source: DKS Associates, 1999.

### **Air Quality**

Construction impacts associated with this sub-alternative would be slightly greater than with the proposed project, since this sub-alternative would entail construction of improvements to Clark Tunnel Road. No additional vehicle trips would be generated by this alternative, but proposed project generated trips would be redistributed on the roadway network. Because this sub-alternative would introduce vehicular traffic to Clark Tunnel Road, roadside pollutant concentrations along this roadway would increase over concentrations associated with the proposed project. Decreases in vehicle volumes along other roadways, such as Sierra College Boulevard, would decrease pollutant concentrations slightly along those roadways. There is no clear preference between the proposed project and Sub-Alternative 5-3 with respect to air quality.

### **Noise**

Construction noise impacts associated with Sub-Alternative 5-3 would be slightly greater than with the proposed project because improvements to Clark Tunnel Road would be constructed. The effect of Sub-Alternative 5-3 would be to redistribute existing trips as opposed to generating additional vehicle trips. This vehicle volume redistribution would generate higher noise levels along Clark Tunnel Road than with the proposed project. Several noise-sensitive receivers lie along Clark Tunnel Road, and could potentially be affected by these noise level increases. The proposed project would therefore be slightly preferred over Sub-Alternative 5-3 with respect to noise impacts.

### **Soils, Geology, and Seismicity**

Because of the improvements necessary to Clark Tunnel Road under Sub-Alternative 5-3, there would be greater potential for soil erosion, topographic alteration and slope instability. Therefore the proposed project would be preferred over Sub-Alternative 5-3.

### **Hazardous Waste/Materials**

Since construction activity would be slightly increased as a result of the necessary improvements to Clark Tunnel Road under Sub-Alternative 5-3, there would be a slightly increased potential for the release of hazardous materials during construction. Impacts could be mitigated through mitigation measures described for the proposed project. Therefore, there would be no preference between the proposed project and Sub-Alternative 5-3.

### **Hydrology and Water Quality**

No impacts to hydrology or groundwater resources are anticipated from Sub-Alternative 5-3. Impacts to surface water quality would be essentially the same as those identified for the proposed project, with the exception of increased potential for erosion and resultant increases in runoff sediment content during and after construction of roadway improvements. However, the erosion control mitigation measures described for the proposed project could be re-designed for this alternative to reduce the level of impact to less than significant. There is no clear preference between Sub-Alternative 5-3 and the proposed project.

### **Biology**

Loss of protected trees because of construction within this sub-alternative project area would increase compared with the proposed project. The section of Clark Tunnel Road from the intersection with Bickford Ranch Road to the intersection with SR 193 is outside of the area included in the tree survey and the tree removal plan maps (GW Consulting Engineers, no date). The number of potentially affected trees for this section of Clark Tunnel Road was estimated by comparing the approximate density of trees in

nearby areas that are included on the tree removal plan maps with the extent of area proposed for grading to improve Clark Tunnel Road. The additional number of affected trees could vary from approximately 200 to 300 protected trees.

Construction impacts on riparian vegetation along Clover Valley Creek and other drainages would not differ from the proposed project. There would be a slight increase in construction impacts on special-status plant habitat in the oak woodland. Indirect construction impacts on wetlands and other waters of the United States would not likely increase. Indirect impacts on the nearby drainage (RW-7 on Figure 13-2 in Chapter 13) would be avoided by the inclusion of BMPs for the road construction to prevent erosion and sedimentation outside of the construction area. No change in direct wetland impacts is anticipated. Implementation of this sub-alternative would result in impacts equal to or greater than impacts identified for the proposed project for raptors and special-status wildlife species, including vernal pool fairy shrimp, VELB, California red-legged frog, Foothill yellow-legged frog, northwestern pond turtle, and Cooper's hawk.

No change in operation phase impacts from the proposed project is anticipated. The proposed project would be preferred over Sub-Alternative 5-3.

### **Cultural Resources**

Similar to Sub-Alternative 5-1, it appears that impacts to Site DCN-13 could occur due to its close proximity to Clark Tunnel Road. Also like Sub-Alternative 5-1, no cultural resources inventory has been conducted of the portion of Clark Tunnel Road extending north from the project boundaries or of the adjoining section of SR 193. As such, there is the potential that unknown cultural resources located along this stretch of Clark Tunnel Road and SR 193 could be impacted under Sub-Alternative 5-3.

Impacts to paleontological remains would likely increase with this particular sub-alternative as road construction within the Mehrten lahars increases the potential for encountering such resources. Only a small section of Clark Tunnel Road, however, traverses across the Mehrten lahars. Thus, the potential for impacts to paleontological resources is minimal. The proposed project is slightly preferred over Sub-Alternative 5-3.

### **Visual Quality**

Under Sub-Alternative 5-3, traffic volume would increase along Clark Tunnel Road. Several dispersed rural residences in close proximity to Clark Tunnel Road would be affected by a slight increase in traffic. The proposed project would be slightly preferred over Sub-Alternative 5-3.

#### **16.1.2.6 Alternative 6 – Affordable Housing Alternative**

An alternative “affordable” housing option would consider different housing types at different locations with the project site. The land uses for Alternative 6 are shown on Figure 16-5 and are summarized in Table 16-43 below.



**Table 16-43**  
**Land Uses – Alternative 6**

Key	Residential	Typical Lot Size	Units ±	Acres
RE	Rural Estate	3.5 - 10 ac.	37	240.3
RR	Rural Residential	2.0 – 3.4 ac.	46	125.0
CR	Country Residential	0.9 – 1.9 ac.	100	125.3
ER	Estate Residential	0.3 – 0.7 ac..	433	256.7
LDR	Low Density Residential	7,000 to 15,000 sq. ft.	387	116.4
MLD	Medium Low Density	6,000 to 10,000 sq. ft.	363	115.2
MD	Medium Density	5,000 to 7,400 sq. ft.	584	119.6
	Sub-total		1950	1,098.5
VR	Village Residential <sup>1</sup>	Senior Multi-Family	100	5.5
SRU	Secondary Residential Units <sup>2</sup>		95	
	Sub-total		195 <sup>3</sup>	5.5
	OPEN SPACE/ RECREATION			
CP	Community Park			72.0
NP	Neighborhood Park <sup>4</sup>			14.5
OSC	Open Space Corridors			37.0
NOS	Natural Open Space			345.0
NOS ESMT	Natural Open Space Easement			(35.2)
WPE	Wetland Preservation Easement			(69.8)
GC	18-Hole Golf Course			313.5
CRC	Clubhouse/Recreation Center			6.0
DR	Driving Range			22.5
GMF	Golf Maintenance Facility			3.5
	Sub Total			814.0
	COMMERCIAL			
VC	Village Center			7.3
	Sub-Total			7.3
	OTHER			
FS	Fire Station			1.7
P/R	Park-n-Ride			0.5
	Public Roadways			37.1
	Other Sub-Total			39.3
	TOTAL		2,145	1,964.6

Note: Easement acreage included in residential land area calculations

<sup>1</sup> SRU consist of Single Family Detached or Attached Housing Units with Square Footage Limitations.

<sup>2</sup> Affordable Housing Units

<sup>3</sup> Includes (a) and (b)

<sup>4</sup> Includes Antenna Tower



Three types of affordable housing would be constructed in this alternative. The first type of affordable housing would be a 100-unit senior multi-family complex which would replace the proposed project's private recreation center. This six-acre site is along the main access street and is adjacent to the village commercial site, allowing convenient access to retail shopping and services. Other affordable housing would include 95 dwelling units to be distributed in the Meadows and the Ridges communities of the project. These dwelling units could include secondary residential units, which could be part of the main dwelling or could be a stand-alone structure for senior relatives, or rented to students or others wishing to live in the area. They could also be "square-footage-limited housing" units. A population of approximately 5,421 people is estimated for this alternative.

All affordable housing would be priced for low and very low income households. Other amenities for this alternative would be similar to the proposed project, except that the Village Recreation Center would not be constructed.

Environmental impacts associated with Alternative 6 are qualitatively analyzed below.

### **Land Use**

Alternative 6 would result in 10 percent more residential units than with the proposed project. Construction of these additional units would require a 5 percent increase in the amount of land needed for residential development. This would eliminate the Village Recreation component. Alternative 6 contains 104 fewer large lot residential units than the proposed project by increasing the number of low density residential units (by 83 units) and slight increases in medium low and medium density residential units. The proposed project has substantially more open space and recreation uses. The project's compatibility with surrounding uses would be the same with this alternative as with the proposed project. However, unlike the proposed project, this alternative would meet the high-density residential requirement for a Planned Development, as specified in Appendix C of the General Plan. Alternative 6 is preferred over the proposed project because it includes the high-density Village Residential component and would eliminate the General Plan inconsistency related to affordable housing and incorporation of multi-family units.

### **Population and Housing**

Since the overall housing supply would be 195 units more than under the proposed project, of which 100 units would be age-restricted, Alternative 6 would result in 24 percent more residents. Inclusion of a senior multi-family complex and the provision for secondary residential units would increase the area's affordable housing supply with regard to low-income households. Alternative 6 is preferred over the proposed project because it furthers the project objectives to a greater extent and helps to meet the County's goals by providing affordable housing opportunities for a wider range of economic groups.

### **Public Services and Utilities**

**Water:** Under Alternative 6, demand for treated domestic water would be increased by about 15 to 25 percent to accommodate the increased population density. On- and off-site domestic water conveyance systems would need to be essentially the same as those for the proposed project, and the on-site water distribution system would be expanded to serve the increased residential densities. The increase in demand for domestic water would make this alternative less desirable than the proposed project, and hydraulic impacts to the existing off-site water distribution system would be greater. The demand for raw water from Caperton and Antelope Canals would be the same as for the proposed project, and the associated impacts and mitigation measures would be similar. Overall, the proposed project is preferable to Alternative 6 in terms of impacts to water supply, treatment, and conveyance systems.

**Wastewater:** Alternative 6 would increase the demand for wastewater conveyance and treatment capacity by about 25 percent over the proposed project to accommodate the increased population density. On-site conveyance systems would be essentially the same, although sewer main pipe sizes may need to be increased. Impacts to off-site treatment and conveyance systems could be mitigated through implementation of the mitigation measures identified in Section 6.4.2 but portions of the project would likely need to be delayed until additional treatment capacity is available at the LWWTP or RWWTP. The proposed project is therefore preferable to Alternative 6.

**Electricity/Gas/Energy:** Increasing the total number of units by 195 will increase demand for electricity, natural gas, and energy, resulting in an increased impact on resources and distribution systems. The proposed project is preferred over Alternative 6.

**Parks and Recreation:** Park and recreation facilities included in Alternative 6 differ primarily from the proposed project in that the Village Recreation Center would not be included. Under Alternative 6, the total acreage of improved public parkland is 39.5 acres and for passive recreation areas is 424 acres. The proposed project would provide less public park land and more open space than this alternative. This would be an adequate supply to meet the County requirement of 27 acres each for an increased population of 5,421 new residents. Some additional stress on recreational opportunities outside the project limits could be anticipated, therefore, the proposed project would be preferred over Alternative 6.

**Other County/Community Services:** Alternative 6 would increase the number of units and residents, therefore, it will increase the demand for other County and community services. The proposed project is preferred over Alternative 6 regarding impacts to County and community services.

### **Traffic and Circulation (Quantitative Analysis)**

Table 16-44 summarizes the trip generation of Alternative 6. This alternative would generate about 16,860 daily vehicle trips on an average weekday (note that internal trip “ends” are not double counted). About 13,115 of these daily vehicle trips would travel outside the project site. This alternative would add about 615 more daily vehicle trips to roadways outside the project site than would the proposed project.

Tables 16-45, 16-46, and 16-47 show roadway segment level of service analyses (based on daily traffic volumes) for Existing Plus Alternative 6, 2010 General Plan Plus Alternative 6 and Buildout of Project Vicinity Plus Alternative 6, respectively. The distribution of project traffic under each of these development scenarios is shown in Table 7-7. The roadway segment impacts under Alternative 6 would be the same as those under the proposed project for all three development scenarios.

Tables 16-48, 16-49, and 16-50 show the intersection level of service analyses for the Existing Plus Alternative 6, 2010 General Plan Plus Alternative 6, and Buildout of Project Vicinity Plus Alternative 6, respectively. The intersection impacts under Alternative 6 would be the same as those under the proposed project for all three development scenarios.

Alternative 6 would have about the same impacts on transit services and bikeways as the proposed project. There would be no preference between Alternative 6 and the proposed project.

**Table 16-44**  
**Estimated Trip Generation**  
**Alternative 6 – Affordable Housing**

Land Use		Units	Daily		A.M. Peak Hour				P.M. Peak Hour			
					In		Out		In		Out	
			Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips	Trips per Unit	Trips
Residential	The Ridge	1,004 DU	9.57	9,608	0.19	191	0.56	562	0.64	643	0.36	361
	The Meadows	94 DU	9.57	900	0.19	18	0.56	53	0.64	60	0.36	34
	Heritage Ridge	1,047 DU	3.68	3,853	0.14	149	0.13	136	0.13	135	0.14	151
	Subtotal	2,145 DU		14,361		357		751		838		546
	% Internal Trips			26%		12%		9%		26%		40%
	Internal Trips			3,744		70		41		219		219
	External Trips			10,617		316		861		619		327
Commercial	Village Center	7.3 Acres	855	6,242	12.70	93	7.46	54	40.00	292	40.00	292
	% Internal Trips			60%		75%		75%		75%		75%
	Internal Trips			3,744		70		41		219		219
	External Trips			2,498		23		13		73		73
<b>Total External Trips</b>				<b>13,115</b>		<b>339</b>		<b>694</b>		<b>692</b>		<b>400</b>

Source: DKS Associates, 1999

**Table 16-45  
Roadway Segment Levels of Service  
Existing Conditions Plus Alternative 6**

Roadway	Segment	No. of Lanes	No Project		Alternative 6	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	2	4,880	A	8,030	A
	Twelve Bridges to Bickford Ranch Rd	2	5,600	A	8,170	A
	Bickford Ranch Rd to English Colony	2	5,600	A	15,570	D
	English Colony to King Road	2	5,780	A	14,830	D
	King Road to Taylor Road	2	6,100	A	14,490	D
	Taylor Road to Granite	2	10,200	A	17,020	E
	Granite to I-80	2	14,770	D	21,460	F
SR 193	SR 65 to Lincoln City Limits	2	6,700	A	7,750	A
	Lincoln City Limits to Sierra College	2	6,500	A	8,730	A
	Sierra College to Clark Tunnel	2	5,000	A	5,920	A
	Clark Tunnel to Newcastle	2	4,400	A	5,320	A
I-80	West of Sierra College Blvd	6	87,000	D	92,250	D
	East of SR 193	6	80,000	D	81,310	D
Lower Ranch Rd.	East of Sierra College	2	-		1,180	A
Bickford Ranch Rd.	East of Sierra College	2	-		11,320	B
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	240	A	240	A
English Colony Rd	Sierra College to Clark Tunnel	2	870	A	1,790	A
	Clark Tunnel to Taylor	2	2,530	A	3,450	A

Source: DKS Associates, 1999.

**Table 16-46  
Roadway Segment Levels of Service  
2010 General Plan Plus Alternative 6**

Roadway	Segment	No. of Lanes	No Project		Alternative 6	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	12,690	A	16,620	A
	Twelve Bridges to Bickford Ranch Rd	4	15,220	A	19,050	A
	Bickford Ranch Rd to English Colony	4	15,220	A	23,610	B
	English Colony to King Road	4	13,990	A	20,810	A
	King Road to Taylor Road	4	15,970	A	22,000	B
	Taylor Road to Granite	4	29,200	D	34,310	E
	Granite to I-80	6	30,970	A	35,560	B
SR 193	SR 65 to Lincoln City Limits	4	12,120	A	13,820	A
	Lincoln City Limits to Sierra College	4	19,550	A	22,830	B
	Sierra College to Clark Tunnel	2	13,430	C	14,090	C
	Clark Tunnel to Newcastle	2	9,300	A	9,950	A
I-80	West of Sierra College Blvd	6	110,000	F	113,670	F
	East of SR 193	6	100,000	F	100,790	F
Lower Ranch Rd.	East of Sierra College	2	-	A	1,440	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	11,680	B
12 Bridges Rd.	West of Sierra College	4	2,560	A	3,350	A
Clover Valley Rd.	West of Sierra College	2	2,820	A	3,740	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	460	A	460	A
English Colony Rd	Sierra College to Clark Tunnel	2	3,200	A	3,860	A
	Clark Tunnel to Taylor	2	4,770	A	5,430	A

Source: DKS Associates, 1999.

**Table 16-47**  
**Roadway Segment Levels of Service**  
**Buildout of Project Vicinity Plus Alternative 6**

Roadway	Segment	No. of Lanes	No Project		Alternative 6	
			ADT	LOS	ADT	LOS
Sierra College Blvd.	SR 193 to Twelve Bridges	4	14,600	A	18,010	A
	Twelve Bridges to Bickford Ranch Rd	4	27,360	C	31,810	D
	Bickford Ranch Rd to English Colony	4	27,360	C	35,220	E
	English Colony to King Road	4	23,780	B	30,080	D
	King Road to Taylor Road	4	23,800	B	29,310	D
	Taylor Road to Granite	4	35,190	E	39,910	F
	Granite to I-80	6	34,710	B	38,910	C
SR 193	SR 65 to Lincoln City Limits	4	12,290	A	13,730	A
	Lincoln City Limits to Sierra College	4	21,870	B	24,760	B
	Sierra College to Clark Tunnel	2	14,600	D	15,120	D
	Clark Tunnel to Newcastle	2	9,930	A	10,450	A
I-80	West of Sierra College Blvd	6	111,420	F	114,830	F
	East of SR 193	6	100,700	F	101,360	F
Lower Ranch Road	East of Sierra College	2	-	A	1,310	A
Bickford Ranch Rd.	East of Sierra College	2	-	A	11,810	B
12 Bridges Rd.	West of Sierra College	4	15,710	A	17,550	A
Clover Valley Rd.	West of Sierra College	2	6,640	A	7,690	A
Clark Tunnel Rd	SR 193 to Callison Rd	2	50	A	50	A
	Callison Rd To English Colony	2	460	A	460	A
English Colony Rd	Sierra College to Clark Tunnel	2	5,430	A	5,950	A
	Clark Tunnel to Taylor	2	6,480	A	7,010	A

Source: DKS Associates, 1999.



**Table 16-48**  
**Intersection Levels of Service, Existing Plus Alternative 6**

Intersection		Control Type	No Project						Plus Alternative 6			
			A.M.			P.M.			A.M.		P.M.	
			LOS	LOS Criteria		LOS	LOS Criteria		LOS	LOS Criteria	LOS	LOS Criteria
<b>SR 193</b>	<b>SR 65</b>	Signal	<b>A</b>	0.507 V/C		<b>A</b>	0.580 V/C		<b>A</b>	0.527 V/C	<b>B</b>	0.620 V/C
<b>Sierra College</b>	<b>SR 193</b>	Stop	<b>A</b>	2.1 sec		<b>A</b>	3.1 sec		<b>A</b>	4.0 sec	<b>A</b>	4.3 sec
	<i>NB Approach</i>		<b>B</b>	7.3 sec		<b>B</b>	6.8 sec		<b>C</b>	10.2 sec	<b>C</b>	9.6 sec
	<i>SB Left</i>		<b>B</b>	6.6 sec		<b>A</b>	3.1 sec		<b>B</b>	7.6 sec	<b>B</b>	8.0 sec
<b>SR 193</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.0 sec		<b>A</b>	0.0 sec		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	<i>NB Approach</i>		<b>A</b>	0.0 sec		<b>A</b>	0.0 sec		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
	<i>WB Left</i>		<b>A</b>	0.0 sec		<b>A</b>	0.0 sec		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Lower Ranch Road</b>	Stop	<b>N/A</b>			<b>N/A</b>			<b>A</b>	0.7	<b>A</b>	0.5
	<i>SB Left</i>								<b>A</b>	2.9	<b>A</b>	3.5
	<i>WB Approach</i>								<b>B</b>	5.5	<b>B</b>	5.9
<b>Sierra College</b>	<b>Twelve Bridges Drive</b>	Stop	<b>A</b>	0.2 sec		<b>A</b>	0.4 sec		<b>A</b>	0.2 sec	<b>A</b>	0.4 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec		<b>A</b>	2.6 sec		<b>A</b>	3.6 sec	<b>A</b>	3.0 sec
	<i>EB Approach</i>		<b>A</b>	4.0 sec		<b>A</b>	4.3 sec		<b>A</b>	4.4 sec	<b>B</b>	5.3 sec
<b>Sierra College</b>	<b>Bickford Ranch Road</b>	Signal	<b>N/A</b>			<b>N/A</b>			<b>B</b>	0.606 V/C	<b>B</b>	0.609 V/C
<b>Sierra College</b>	<b>English Colony Way</b>	Stop	<b>A</b>	0.2 sec		<b>A</b>	0.2 sec		<b>A</b>	0.4 sec	<b>A</b>	0.6 sec
	<i>SB Left</i>		<b>A</b>	2.5 sec		<b>A</b>	3.0 sec		<b>A</b>	3.4 sec	<b>B</b>	5.3 sec
	<i>WB Approach</i>		<b>A</b>	4.4 sec		<b>A</b>	4.9 sec		<b>B</b>	6.6 sec	<b>B</b>	8.2 sec
<b>Sierra College</b>	<b>Clover Valley Road</b>	Stop	<b>A</b>	0.0 sec		<b>A</b>	0.0 sec		<b>A</b>	0.0 sec	<b>A</b>	0.0 sec
<b>Sierra College</b>	<b>Del Mar Avenue</b>	Stop	<b>A</b>	0.8 sec		<b>A</b>	0.6 sec		<b>A</b>	1.0 sec	<b>A</b>	0.7 sec
	<i>NB Left</i>		<b>A</b>	3.2 sec			sec		<b>B</b>	5.4 sec		sec
	<i>SB Left</i>					<b>A</b>	3.0				<b>B</b>	5.1
	<i>EB Approach</i>		<b>B</b>	6.9 sec		<b>B</b>	6.6 sec		<b>C</b>	18.2 sec	<b>C</b>	18.1 sec
	<i>WB Approach</i>		<b>B</b>	7.3 sec		<b>B</b>	6.6 sec		<b>D</b>	21.0 sec	<b>C</b>	18.2 sec
<b>Sierra College</b>	<b>King Road</b>	Stop	<b>A</b>	0.9 sec		<b>A</b>	1.2 sec		<b>A</b>	0.9 sec	<b>A</b>	1.7 sec
	<i>NB Left</i>		<b>A</b>	2.8 sec		<b>A</b>	2.6 sec		<b>A</b>	4.6 sec	<b>A</b>	3.5 sec
	<i>SB Left</i>		<b>A</b>	2.6 sec		<b>A</b>	3.1 sec		<b>A</b>	3.4 sec	<b>B</b>	5.3 sec
	<i>EB Approach</i>		<b>B</b>	5.2 sec		<b>B</b>	7.4 sec		<b>C</b>	12.4 sec	<b>D</b>	22.0 sec
	<i>WB Approach</i>		<b>A</b>	4.8 sec		<b>A</b>	5.0 sec		<b>B</b>	8.9 sec	<b>C</b>	10.3 sec
<b>Sierra College</b>	<b>Taylor Road</b>	Signal	<b>A</b>	0.443 V/C		<b>A</b>	0.489 V/C		<b>B</b>	0.683 V/C	<b>C</b>	0.739 V/C
<b>Sierra College</b>	<b>Granite Drive</b>	Signal	<b>A</b>	0.472 V/C		<b>B</b>	0.681 V/C		<b>C</b>	0.720 V/C	<b>E</b>	0.943 V/C
<b>Sierra College</b>	<b>I-80 WB Ramps</b>	Signal	<b>C</b>	0.753 V/C		<b>C</b>	0.798 V/C		<b>E</b>	0.919 V/C	<b>F</b>	1.054 V/C
<b>Sierra College</b>	<b>I-80 EB Ramps</b>	Signal	<b>C</b>	0.762 V/C		<b>D</b>	0.881 V/C		<b>E</b>	0.959 V/C	<b>F</b>	1.113 V/C
<b>English Colony Way</b>	<b>Clark Tunnel Road</b>	Stop	<b>A</b>	0.6 sec		<b>A</b>	0.5 sec		<b>A</b>	0.6 sec	<b>A</b>	0.4 sec
	<i>SB Approach</i>		<b>A</b>	4.6 sec		<b>A</b>	4.4 sec		<b>B</b>	5.0 sec	<b>A</b>	4.9 sec
	<i>EB Left</i>		<b>A</b>	2.4 sec		<b>A</b>	2.5 sec		<b>A</b>	2.5 sec	<b>A</b>	2.6 sec
<b>English Colony Way</b>	<b>Taylor Road</b>	Stop	<b>B</b>	6.4 sec		<b>D</b>	11.6 sec		<b>B</b>	8.1 sec	<b>C</b>	11.9 sec

Source: DKS Associates, 1999.

**Table 16-49**  
**Intersection Levels of Service, 2010 General Plan Plus Alternative 6**

Intersection		Control Type	No Project				Plus Alternative 6			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.948 V/C	F	1.158 V/C	E	0.989 V/C	F	1.201 V/C
Sierra College	SR 193	Signal	B	0.645 V/C	C	0.722 V/C	C	0.743 V/C	C	0.786 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 sec
	NB Approach		A	3.5 sec	A	0.0 sec	A	3.6 sec	A	0.0 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	0.0 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.8 sec	A	0.6 sec
	SB Left						B	5.0 sec	B	5.4 sec
	WB left						E	32.5 sec	E	34.7 sec
Sierra College	Twelve Bridges Drive	Signal	A	0.404 V/C	A	0.381 V/C	A	0.465 V/C	A	0.462 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		A	0.521 V/C	A	0.471 V/C
Sierra College	English Colony Way	Signal	A	0.380 V/C	A	0.364 V/C	A	0.480 V/C	A	0.521 V/C
Sierra College	Clover Valley Road	Signal	A	0.300 V/C	A	0.252 V/C	A	0.444 V/C	A	0.411 V/C
Sierra College	Del Mar Avenue	Stop	A	1.5 sec	A	0.9 sec	A	4.0 sec	A	2.2 sec
	NB Left		A	4.9 sec		sec	B	7.6 sec		sec
	SB Left		A	4.8 sec	A	4.5 sec	B	6.0 sec	B	7.0 sec
	EB Approach		D	25.0 sec	D	23.4 sec	F	69.8 sec	F	73.4 sec
	WB Approach		E	30.0 sec	D	23.4 sec	F	112.6 sec	F	61.1 sec
Sierra College	King Road	Signal	A	0.404 V/C	A	0.443 V/C	A	0.493 V/C	A	0.595 V/C
Sierra College	Taylor Road	Signal	D	0.880 V/C	D	0.878 V/C	E	0.979 V/C	E	0.935 V/C
Sierra College	Granite Drive	Signal	B	0.628 V/C	C	0.743 V/C	B	0.677 V/C	D	0.805 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.745 V/C	C	0.733 V/C	C	0.794 V/C	D	0.814 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.634 V/C	B	0.619 V/C	B	0.652 V/C	B	0.699 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.7 sec	A	0.5 sec	A	0.7 sec	A	0.5 sec
	SB Approach		B	6.0 sec	B	5.8 sec	B	6.4 sec	B	6.2 sec
	EB Left		A	3.0 sec	A	2.6 sec	A	3.1 sec	A	2.7 sec
English Colony Way	Taylor Road	Signal	B	0.670 V/C	C	0.788 V/C	C	0.705 V/C	D	0.802 V/C

Source: DKS Associates, 1999.

**Table 16-50**  
**Intersection Levels of Service, Buildout of Project Vicinity Plus Alternative 6**

Intersection		Control Type	No Project				Plus Alternative 6			
			A.M.		P.M.		A.M.		P.M.	
			LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria	LOS	LOS Criteria
SR 193	SR 65	Signal	E	0.991 V/C	F	1.189 V/C	F	1.023 V/C	F	1.228 V/C
SR 193	Ferrari Ranch Road	Signal	B	0.646 V/C	C	0.797 V/C	B	0.700 V/C	D	0.850 V/C
Sierra College	SR 193	Signal	D	0.897 V/C	E	0.902 V/C	C	0.770 V/C	D	0.824 V/C
SR 193	Clark Tunnel Road	Stop	A	0.0 sec	A	0.0 sec	A	0.0 sec	A	0.0 sec
	NB Approach		B	9.9 sec	C	11.0 sec	C	10.4 sec	C	11.7 sec
	WB left		A	2.8 sec	A	0.0 sec	A	2.9 sec	A	0.0 sec
Sierra College	Lower Ranch Road	Stop	N/A		N/A		A	0.6 sec	A	0.5 sec
	SB Left						B	5.6 sec	A	5.3 sec
	WB left						E	37.5 sec	E	38.5 sec
Sierra College	Twelve Bridges Drive	Signal	C	0.722 V/C	C	0.786 V/C	D	0.803 V/C	D	0.874 V/C
Sierra College	Bickford Ranch Road	Signal	N/A		N/A		B	0.656 V/C	C	0.729 V/C
Sierra College	English Colony Way	Signal	A	0.516 V/C	A	0.591 V/C	A	0.591 V/C	C	0.738 V/C
Sierra College	Clover Valley Road	Signal	A	0.588 V/C	A	0.469 V/C	C	0.724 V/C	B	0.624 V/C
Sierra College	Del Mar Avenue	Stop	C	11.1 sec	A	2.8 sec	F	46.1 sec	C	18.9 sec
	NB Left		B	9.6 sec		sec	C	14.5 sec		sec
	SB Left		B	6.9 sec	B	8.9 sec	C	8.4 sec	C	13.3 sec
	EB Approach		F	115.0 sec	F	112.8 sec	F	>180 sec	F	1035.0 sec
	WB Approach		F	>180 sec	F	108.0 sec	F	>180 sec	F	512.6 sec
Sierra College	King Road	Signal	A	0.565 V/C	C	0.710 V/C	B	0.664 V/C	D	0.852 V/C
Sierra College	Taylor Road	Signal	E	0.990 V/C	E	0.928 V/C	F	1.081 V/C	F	1.022 V/C
Sierra College	Granite Drive	Signal	B	0.682 V/C	D	0.805 V/C	C	0.767 V/C	D	0.876 V/C
Sierra College	I-80 WB Ramps	Signal	C	0.792 V/C	D	0.818 V/C	D	0.838 V/C	D	0.899 V/C
Sierra College	I-80 EB Ramps	Signal	B	0.696 V/C	C	0.736 V/C	C	0.710 V/C	D	0.810 V/C
English Colony Way	Clark Tunnel Road	Stop	A	0.6 sec	A	0.4 sec	A	0.6 sec	A	0.4 sec
	SB Approach		B	7.3 sec	B	7.7 sec	B	7.7 sec	B	7.7 sec
	EB Left		A	3.1 sec	A	3.1 sec	A	3.1 sec	A	3.1 sec
English Colony Way	Taylor Road	Signal	C	0.750 V/C	D	0.801 V/C	C	0.777 V/C	D	0.812 V/C

Source: DKS Associates, 1999.

### **Air Quality**

Construction impacts associated with Alternative 6 would be greater than with the proposed project, since this alternative would entail construction of additional residential units. Alternative 6 would entail more grading than the proposed project.

Because Alternative 6 would include additional housing units, the number of trips generated by this alternative would represent a substantial increase over vehicle trips generated by the proposed project. This increase in vehicle trips would result in a corresponding increase in vehicular emissions of CO, particulates, and ozone precursors. The affordable housing alternative would entail the addition of primarily high-density development, which is typically conducive to using alternative modes of transportation; however, the net effect of this alternative would be increased emissions as a result of increased trips. Additional trips generated by Alternative 6 traffic would also increase vehicle volumes on the roadway network, thereby potentially increasing roadside CO concentrations.

Because Alternative 6 would generate higher emissions than the proposed project, the proposed project would be preferred over Alternative 6.

### **Noise**

Construction-generated noise for Alternative 6 would be greater than for the proposed project, since this alternative would entail additional grading and construction. Operational noise levels associated with Alternative 6 would generally be higher than for the proposed project. Additional housing units would result in a higher residential activity level than with the proposed project, therefore noise generated by project residents would be lower with the proposed project than with Alternative 6. Because the number of daily vehicle trips generated with Alternative 6 would be higher than with the proposed project, on- and off-site traffic noise levels would be greater with Alternative 6. The proposed project is preferred over Alternative 6 with respect to potential noise impacts.

### **Soils, Geology, and Seismicity**

Alternative 6 would involve slightly more grading and consequent soil disturbance than the proposed project. As a result, there would be proportionately more potential soil erosion and topographic alteration. Because of the increased number of dwelling units, the potential for differential settlement under structures and foundation instability would be increased. The proposed project would be slightly preferred over Alternative 6.

### **Hazardous Waste/Materials**

Alternative 6 would result in a greater population utilizing the same amenities as the proposed project. The residential use of hazardous materials is anticipated to increase, as would the potential for a hazardous materials release. The proposed project would be preferred over Alternative 6.

### **Hydrology and Water Quality**

Alternative 6 will increase by 195 the total number of developed lots, which will increase the amount of impervious surface, limiting groundwater recharge. Impacts to groundwater from other sources, such as the golf course and septic systems, will remain the same. Due to the increased number of residential units and increased housing densities, the total impervious area would be greater than for the proposed project. Runoff water quality can therefore be expected to be somewhat poorer than that predicted for the proposed project, and similar mitigation measures would be needed. Other potential sources of impacts to

surface water quality would be essentially the same as the proposed project. The proposed project is preferable to Alternative 6.

## **Biology**

Because of the potential increase in the construction impact area on some residential lots to accommodate the 95 affordable housing units, this alternative could result in greater construction phase impacts on biological resources than the proposed project. The replacement of the proposed project's recreation center with a 100-unit senior multi-family complex would not significantly change impacts on biological resources. Affected resources would include oaks and other protected trees, special-status plant habitat, and wetlands and other waters of the United States. Construction impacts on riparian vegetation along Clover Valley Creek and other drainages would not likely differ from the proposed project. Implementation of this alternative would result in impacts equal to or greater than impacts identified for the proposed project for raptors and special-status wildlife species, including vernal pool fairy shrimp, VELB, California red-legged frog, Foothill yellow-legged frog, northwestern pond turtle, and Cooper's hawk.

This alternative could result in greater operation phase impacts on oaks and other protected trees, special-status plant habitat, and wetlands and other waters of the United States than the proposed project. Operation phase impacts on riparian vegetation along Clover Valley Creek and other drainages would not likely differ from the proposed project. Operation impacts on wildlife and special-status wildlife would be equal to or greater than impacts identified for the proposed project. The proposed project is preferred over Alternative 6.

## **Cultural Resources**

As the Affordable Housing Alternative retains both the natural open space and development footprints identified in the proposed project, impacts to cultural and paleontological resources would be identical with this development scenario. There is no preference between the proposed project and this alternative.

## **Visual Quality**

Under Alternative 6, 95 additional units would be distributed throughout the Meadows and the Ridges communities. These units could be part of the main dwelling or stand-alone structures. In addition this alternative would include 100 senior multi-family Village Residential units. These units would replace the proposed project's private recreation center. Additional development under this alternative would result in slightly greater impacts to viewers and further contribute to the change of the landscape character. The proposed project would be preferred over Alternative 6.

### **16.1.2.7 Alternative 7 – Sierra College Boulevard Widening**

In Alternative 7, road improvements are proposed to widen Sierra College Boulevard as shown on Figure 16-6. The initial improvements were constructed on the east side of the ultimate centerline; therefore, one additional lane would be constructed on the west side of Sierra College Boulevard along its entire frontage with the project site. The implementation of this alternative would bring the proposed project into compliance with General Plan Policy 3.A.2.

This alternative was analyzed in more detail than Alternatives 1 through 6 above. The level of analysis is similar to that for the proposed project. The environmental and regulatory setting for Alternative 7 is the same as for the proposed project for several of the environmental resource areas: public services and utilities; traffic; air quality; noise; and hydrology and water quality. The impacts on these environmental

resource areas are briefly summarized in the section below. For the other resource areas, both the setting and impacts are described in more detail.

### **Land Use**

#### **Setting**

Sierra College Boulevard is a major arterial roadway which extends along the western border of Bickford Ranch, bisecting the project site at the extreme southwestern corner. Twelve Bridges Drive, along with minor streets and driveways, intersect this two-lane County road which serves as a primary travel route between I-80 and SR 193. Since the construction of Twelve Bridges Golf Club and the recent approval of subdivisions immediately west and south of the site, it is expected that Sierra College Boulevard will continue to bear heavier traffic loads.

The portion of the study area through which Sierra College Boulevard passes is designated in the Placer County General Plan as Agriculture/Timberland 10-acre minimum lot areas. Parcels which front this segment of the road are developed as rural residences with limited agricultural uses (e.g., grazing, small orchards, etc.).

#### **Impacts**

The widening of Sierra College Boulevard would not generate any significant impacts to land use. The construction of roadway improvements would not involve substantial conversion of land nor would it generate new land use compatibility issues. No mitigation is proposed or recommended. There is no clear preference between Alternative 7 and the proposed project.

### **Population and Housing**

#### **Setting**

Sierra College Boulevard extends through rural residential lands along the western and southwestern edges of Bickford Ranch. The large, rural parcels along this segment of the roadway consist of single-family homes, appurtenant structures and limited agricultural operations on the west side; undeveloped grazing land with an unoccupied single-family residence and outbuildings are situated on the east side (i.e., the project site). No multi-family units are located along this portion of Sierra College Boulevard.

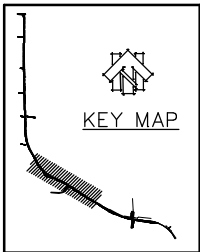
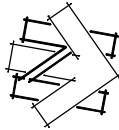
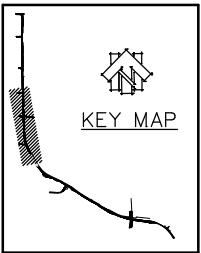
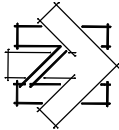
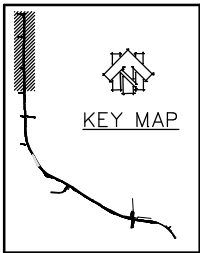
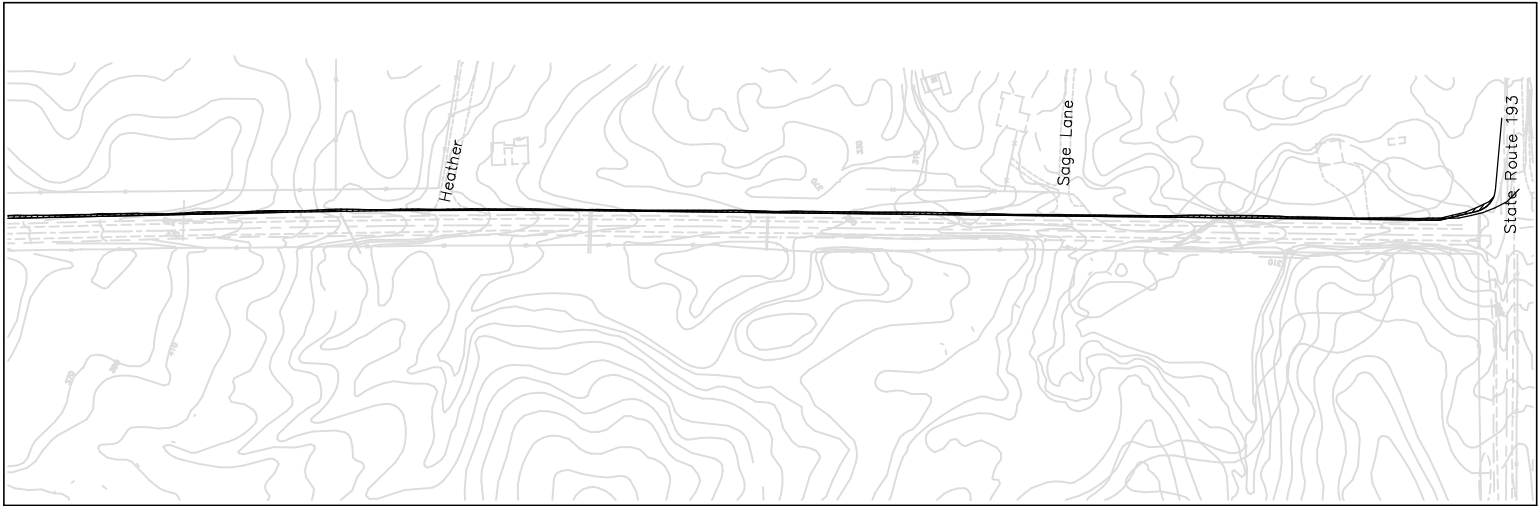
#### **Impacts**

The widening of Sierra College Boulevard would not generate significant adverse impacts to population, employment or housing. No mitigation is proposed or recommended. A beneficial impact would be the temporary employment (e.g., engineering, construction, etc.) associated with the road widening. There is no preference between Alternative 7 and the proposed project.

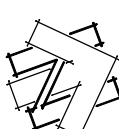
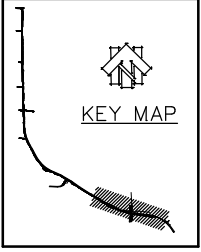
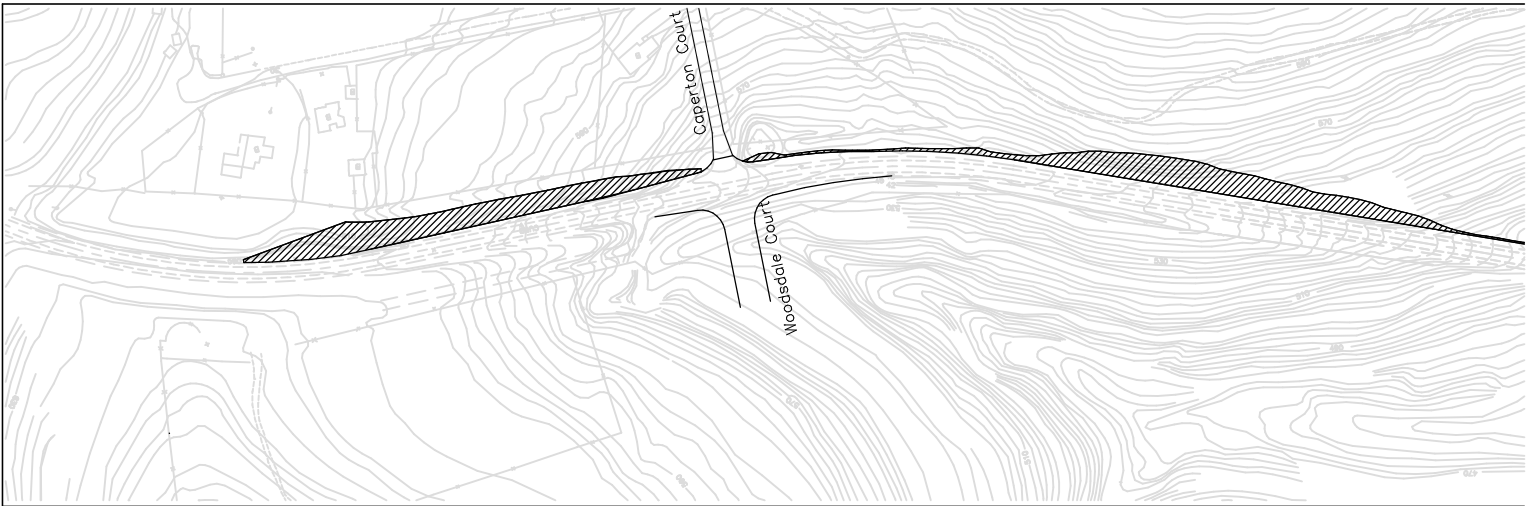
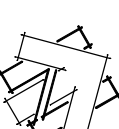
### **Public Services and Utilities**

#### **Setting**

The environmental and regulatory settings for Alternative 7 are the same as for the proposed project.



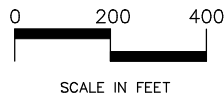
SOURCES: GW Consulting Engineers



LEGEND

 Limits of Grading

**BICKFORD**  
RANCH



ALTERNATIVE 7  
SIERRA COLLEGE BOULEVARD

1999 Bickford Ranch Specific Plan EIR  
Job No. 21305-002-038 Placer County, California



FIGURE 16-6

**Impacts**

**Water:** Impacts related to water supply, treatment, and conveyance would be the same as those identified for the proposed project. There is no preference between the proposed project and Alternative 7.

**Wastewater:** Impacts related to wastewater conveyance and treatment would be the same as those identified for the proposed project. There is no preference between the proposed project and Alternative 7.

**Electricity/Gas/Energy:** Impacts related to electricity, gas, and energy demand would be the same as those identified for the proposed project. There is no preference between the proposed project and Alternative 7.

**Parks and Recreation:** Impacts related to park and recreation facilities would be the same as those identified for the proposed project. There is no preference between the proposed project and Alternative 7.

**Other County/Community Services:** Impacts related to other County and community services would be the same as those identified for the proposed project. There is no preference between the proposed project and Alternative 7.

**Traffic and Circulation****Setting**

The environmental and regulatory settings for Alternative 7 are the same as for the proposed project.

**Impacts**

The frontage improvements on Sierra College Boulevard would add a third lane to this roadway along the length of the project site (i.e., from SR 193 to south of Bickford Ranch Road). The Placer County General Plan calls for Sierra College Boulevard to be widened to four lanes by 2010. Therefore, it was assumed that Sierra College Boulevard would contain four lanes under both the 2010 General Plan scenario and Buildout of Project Vicinity scenario. For this reason, the impacts of Alternative 7 would be the same as the proposed project for these scenarios.

Under Existing Plus Alternative 7 conditions, it was assumed that Sierra College Boulevard would have two southbound lanes and one northbound lane adjacent to the project site. The impacts of Alternative 7 would be the same as the proposed project under this scenario.

Alternative 7 would have short-term construction-related impacts that would not be present under the proposed project. The construction of roadway frontage improvements would involve a widening of Sierra College Boulevard from two lanes to three lanes for the length of the project. During this construction, one-way traffic control (with a “flag-person” to control traffic at each end of the construction zone) may be employed during some of the construction period. Under existing traffic volumes on Sierra College Boulevard, the use of one-way control would delay motorists, but would not pose substantial capacity issues even during peak commute periods. If this widening is implemented after substantial traffic growth occurs on Sierra College Boulevard, then one-way traffic control could cause significant delays during peak commute hours. Implementing Mitigation Measures T-A (Prepare and implement construction traffic management plans) and T-B (Implement a community relations program during construction) would reduce these impacts to less than significant.



Alternative 7 would have about the same impacts on transit services and bikeways as the proposed project.

There would be no preference between Alternative 7 and the proposed project.

### **Air Quality**

#### **Setting**

The environmental and regulatory settings for Alternative 7 are the same as for the proposed project.

#### **Impacts**

Construction impacts associated with this alternative would be largely the same as for the proposed project. Because this alternative would entail construction of an additional vehicle lane along Sierra College Boulevard, this alternative would entail an increase in construction-generated dust, employee vehicle, and construction equipment exhaust emissions over what would be expected with the proposed project. This would be a significant short-term impact of Alternative 7. Implementing Mitigation Measures A-A (Provide dust controls), A-B (Maintain construction equipment and vehicles), A-C (Implement a construction worker trip reduction program), A-D (Use low-emission construction materials and equipment) and T-A (Prepare and implement construction traffic management plans) for on-site construction activities for Bickford Ranch Road and Sierra College Boulevard, and coordinate with appropriate agencies in the preparation and implementation of construction traffic management plans for required off-site improvements would still result in short-term significant impacts. Long-term impacts would be less than significant.

Operational emissions associated with this alternative would also be largely the same as for the proposed project. Along Sierra College Boulevard and especially at the intersection of Sierra College Boulevard and Bickford Ranch Road, roadside carbon monoxide concentrations would be slightly lower than with the proposed project under current operating conditions, since improvements to traffic flow would decrease congestion-generated CO concentrations. Alternative 7 would be slightly preferred over the proposed project with respect to air quality impacts.

### **Noise**

#### **Setting**

The environmental and regulatory settings for Alternative 7 are the same as for the proposed project.

#### **Impacts**

Construction impacts associated with this alternative would be largely the same as for the proposed project. Construction of an additional lane on the western side of Sierra College Boulevard would require a similar array of construction equipment to that required by the proposed project, and noise levels associated with this construction would be similar. Several isolated residences in the area potentially affected by this construction activity are located between 200 and 400 feet from the existing roadway centerline. Maximum hourly noise levels would be approximately 74 dBA 200 feet from the construction area. Construction impacts associated with this Alternative 7 would have a short-term, significant impact.

Implementation of Mitigation Measures N-A (Develop and implement a construction equipment noise abatement program) and T-B (Implement a community relations program during on-site construction, and

coordinate with appropriate agencies in the implementation of a community relations program during construction) would still result in a significant, short-term impact.

Once the project is constructed, worst-case traffic noise generated by traffic on Sierra College Boulevard would be similar to that of the proposed project. The noise analysis for the proposed project assumed free-flowing traffic conditions for a worst-case analysis, therefore predicted traffic noise levels associated with this alternative would be the same as those predicted for the proposed project. No mitigation measures are proposed or recommended. There is no preference between Alternative 7 and the proposed project with respect to noise impacts.

## Soils, Geology, and Seismicity

### Setting

A reconnaissance-level survey of the area of the proposed widening of Sierra College Boulevard was conducted on November 16, 1998 (Dames & Moore, 1998). Topography, geology and soil conditions were observed during this reconnaissance. In addition, appropriate references were reviewed for information regarding geology, mineral resources, seismicity, soils and hazardous waste. Site conditions on the Sierra College Boulevard corridor are generally similar to those found elsewhere on the project site. Deviations are noted in the following sections where appropriate.

**Topography:** The Sierra College Boulevard corridor passes adjacent to the western extent of the project site. Elevations along the corridor range from approximately 270 feet msl at its intersection with SR 193 at the north end of the section to be widened, to approximately 620 feet msl at the south end. At this location the right-of-way passes through an existing cut section through the toe of Boulder Ridge that is approximately 60 feet deep.

**Geology:** The portion of the Sierra College Boulevard right-of-way between the southern limit of the section to be widened, and approximately 1,500 feet west of the proposed location of the Bickford Ranch Road intersection, is underlain by Mehrten formation conglomerate. The remainder of the right-of-way north to the intersection with SR 193 is underlain by granitic bedrock. Both of these materials are excavatable and suitable as fill material, and do not present a significant erosion hazard potential.

**Mineral Resources:** The portion of the Sierra College Boulevard right-of-way which is underlain by granitic bedrock is located within an area classified as Mineral Resource Zone I (MRZ-1) where there is little likelihood for the presence of significant mineral resources. The portion of the right-of-way underlain by the Mehrten formation conglomerate is within an area classified as MRZ-3A<sup>(P)</sup>, and is described as containing placer gold deposits of undetermined resource significance. The proximity of the existing right-of-way reduces the accessibility to this potential resource.

**Seismicity:** No known active faults are zoned beneath or near the portion of the Sierra College Boulevard right-of-way to be widened.

**Soils:** The "Soil Survey of Placer County California, Western Part" (USDA, 1980) shows the portion of the Sierra College Boulevard right-of-way to be widened to be underlain by three soil series: the Andregg coarse sandy loam, Inks cobbly loam and Xerofluvents, frequently flooded. The Andregg series soils correspond to the portion of the right-of-way underlain by granitic bedrock, or from the SR 193 intersection south to approximately 1,500 feet west of the proposed intersection with Bickford Ranch Road. The slopes of these soils are generally less than 15 percent and the erosion hazard is moderate. The remainder of the right of way to the south and east is mapped as Inks cobbly loam, but in reality consists of bedrock cuts within the Mehrten conglomerate. Small portions of the right-of-way up to

approximately 1,500 feet south of the intersection with SR 193 along tributary stream channels are underlain by Xerofluvents, frequently flooded. These soils have a high erosion hazard.

### **Impacts**

The following discussions address construction impacts related to geology, soils, and seismicity. No operational impacts associated with the widening of Sierra College Boulevard are anticipated.

**Topography:** The existing grade would not be altered by the proposed widening of Sierra College Boulevard. Existing cut sections would be widened, but not significantly increased in height. Therefore, topographic alterations resulting from the improvements to the Sierra College Boulevard right-of-way are considered to be less than significant. Since impacts resulting from topographic alteration would be less than significant, there is no preference between Alternative 7 and the proposed project.

**Geology:** A limited portion of the construction activity would involve excavation of high cut slopes within geologic materials with limited inherent stability. Without adequate slope design, the potential for slope failure in these areas as a result of construction of the improvements to Sierra College Boulevard would be potentially significant. Implementing Mitigation Measures G-C (Comply with the conclusions of a site-specific geotechnical investigation) and G-A (Comply with Placer County ordinances for all grading, drainage and construction of improvements) would reduce these impacts to less than significant. Since impacts related to geology would be mitigatable to less than significant, there is no preference between Alternative 7 and the proposed project.

**Mineral Resources:** Based on the locations of abandoned prospects located within the Mehrten conglomerate gravels on the project site, it would appear that the potentially gold-bearing rocks on the project site have been reasonably explored. Therefore, the potential that possible mineral resources within the portion of the Sierra College Boulevard right-of-way that would be widened would be rendered inaccessible is less than significant. Since impacts to mineral resources would be less than significant, there is no preference between Alternative 7 and the proposed project.

**Seismicity:** No active fault traces are located beneath or in the vicinity of the proposed Sierra College Boulevard improvements. Therefore, impacts associated with the potential for seismic activity would be less than significant. Since impacts related to seismicity would be less than significant, there is no preference between Alternative 7 and the proposed project.

**Soils:** A limited portion of the construction activity would involve grading and construction of fill slopes in soils with a high erosion hazard. High cut slopes will be constructed in materials with limited inherent stability. Increased erosion or slope failure in these areas as a result of construction of the improvements to Sierra College Boulevard would be potentially significant. Implementing Mitigation Measures G-C (Comply with the conclusions of a site-specific geotechnical investigation), G-A (Comply with Placer County ordinances for all grading, drainage and construction of improvements) and G-D (Prepare and implement a grading and erosion control plan) would reduce these impacts to a less than significant level. Since impacts to soils could be mitigated to less than significant levels, there is no preference between Alternative 7 and the proposed project.

### **Hazardous Waste/Materials**

#### **Setting**

Based on the limited reconnaissance conducted by Dames & Moore, and a review of federal and state environmental records utilizing a database search of records maintained by Vista Information Solutions,

Inc. (VISTA, 1998), no evidence or records of releases of hazardous materials on or near the portion of the Sierra College Boulevard right-of-way to be widened have been identified.

### **Impacts**

While conditions not revealed or observed may exist, the likelihood that pre-existing environmental conditions will be revealed during ground-disturbing activities associated with construction of the improvements to Sierra College Boulevard is considered to be small. With implementation of Mitigation Measure HW-A (Investigate areas of possible contamination during construction), impacts related to contact with contaminated soils during construction would be less than significant.

During grading and construction activities associated with the widening of Sierra College Boulevard, it is anticipated that limited quantities of hazardous materials may be brought on site. It is possible that temporary aboveground storage tanks and other smaller storage containers will be brought on site for use in storing gasoline and/or diesel fuel for the construction equipment. As with any liquid, during handling and transfer from one container to another, the possibility of an accidental release exists. Implementing Mitigation Measures HW-B (comply with County, CDF, and Penryn Fire Department requirements for temporary storage of combustible/flammable liquids at construction sites) and HW-C (comply with County and CDF requirements for reporting releases of hazardous materials) would reduce these impacts to less than significant. Since impacts related to hazardous materials could be mitigated to levels that would be less than significant, there is no preference between Alternative 7 and the proposed project.

## **Hydrology and Water Quality**

### **Setting**

The environmental and regulatory setting for Alternative 7 are the same as for the proposed project.

### **Impacts**

**Surface Water Hydrology:** Construction of the additional traffic lane at Sierra College Boulevard, Alternative 7, would result in an increase in impermeable surface area, which would be associated with an increase in the rate and volume of runoff. The improvements to Sierra College Boulevard would affect both the Dry Creek Watershed and the Auburn Ravine watershed.

Mitigation measures described for the proposed project could be designed to reduce these impacts to a level that is less than significant. Within the Auburn Ravine watershed, increasing the volume of retention storage (either on-site or off-site) could mitigate the increase in runoff volume. Within the Dry Creek watershed, the Placer County Storm Drainage Manual would require runoff rate controls to reduce the post-project runoff rate to about 90-percent of the pre-project runoff rate. This could be accomplished by increasing the amount of detention storage on the project site or by providing additional off-site detention storage.

However, under Alternative 7 there are five existing culvert crossings at Sierra College Boulevard that would need to be extended. Three of these crossings (all within the Auburn Ravine watershed) are substandard and do not have sufficient capacity to convey the 100-year flood under existing conditions. This is discussed in the Hydrology Study prepared by the applicant. Two of these culverts can only pass about a 5-year flood, the third can pass about a 50-year event. Therefore, with Alternative 7, additional mitigation would be required to provide the required culvert capacity in accordance with County design standards.

Given that the County General Plan identifies that a 4-lane roadway would be needed by 2010, the runoff rate and volume and culvert crossing impacts associated with Alternative 7 would likely occur regardless of the proposed project. Therefore, there is no clear preference between Alternative 7 and the Proposed Project.

**Water Quality:** Paving one additional lane of Sierra College Boulevard would slightly decrease the area available for groundwater recharge. Because the County General Plan indicates that a 4-lane roadway is needed by 2010, these impacts would likely occur regardless of the proposed project or this alternative. Due to the minimal impact, there is no clear preference between the proposed project and Alternative 7 regarding groundwater resources. Impacts to surface water quality would be essentially the same as those identified for the proposed project, with the exception of slightly increased potential for reduced surface water quality due to the increase in the paved area of Sierra College Boulevard. As for the proposed project, the runoff quality mitigation measures described for the proposed project could be designed to reduce the level of impact to less than significant. Therefore, there is no clear preference between Alternative 7 and the proposed project.

### Biology

#### Setting

Reconnaissance-level surveys of the proposed area of widening along Sierra College Boulevard were conducted on November 19, 1998 (Jones & Stokes, 1998). General vegetation and wildlife habitat types were identified and sensitive resources, such as oak trees and wetlands, were identified and mapped (Figures 16-7a and 16-7b).

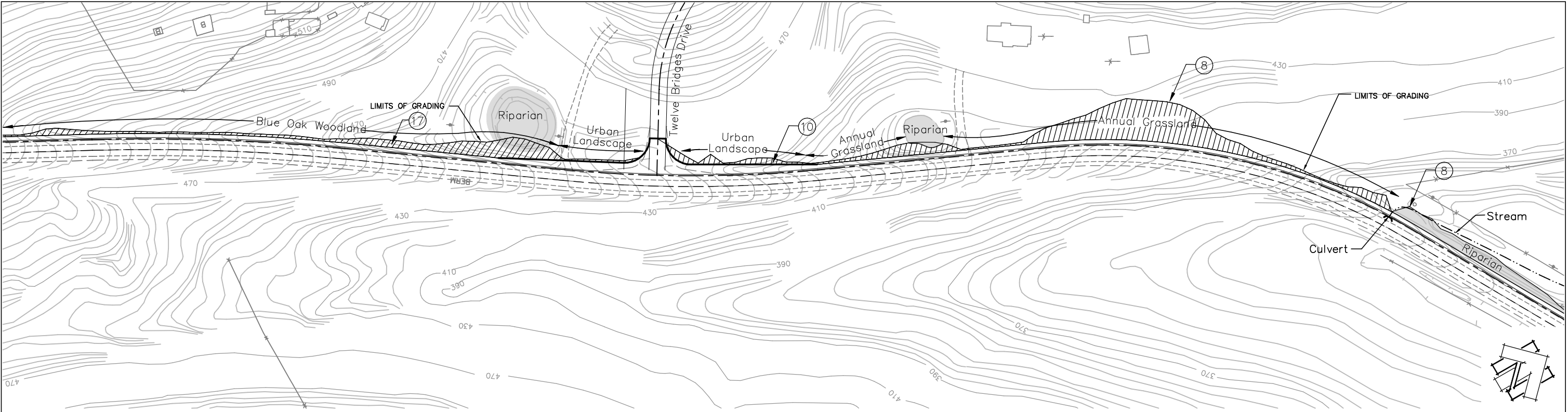
**Annual Grassland:** Annual grassland is a common vegetation community within the Sierra College Boulevard western right-of-way. Because of the proximity of roadways along all of the off-site portions of the study area, much of the annual grassland vegetation is dominated by weedy species and would be considered ruderal. The Sierra College Boulevard right-of-way is in close proximity to the roadway, which is dominated by weedy vegetation and has low wildlife value. The close proximity of vehicles reduces wildlife use of the grassland vegetation along the roadway.

**Blue Oak Woodland:** Blue oak woodland is a common vegetation community within the Sierra College Boulevard western right-of-way. This habitat type has moderate wildlife value. The close proximity of vehicles reduces wildlife use of the blue oaks along the roadway.

**Valley-Foothill Riparian:** Riparian vegetation occurs at three locations along the Sierra College Boulevard right-of-way. One location is associated with a drainage, and two areas are within seasonally wet basins. These riparian habitats have high wildlife value, but the close proximity of vehicles along the roadway reduces wildlife use of these habitats.

**Special-Status Species:** Surveys within the Sierra College Boulevard right-of-way were conducted outside of the blooming period for the special-status plant species; therefore, only potential habitat was identified. Because the study area is adjacent to roads and has a high level of disturbance, the habitat suitability for special-status plant species was determined to be low.

The Sierra College Boulevard right-of-way supports no suitable habitat for fairy shrimp or valley elderberry longhorn beetle. Several drainages occur along Sierra College Boulevard that have only low potential to support breeding red-legged frog due to the low-quality habitat. However, these drainages could be used as movement corridors for red-legged frog.



SOURCES: GW Consulting Engineers and  
Jones & Stokes Associates, Inc.

**LEGEND**

- Riparian
- Approximate Number of Protected Oak Trees
- Area to be Graded

**BICKFORD**  
RANCH

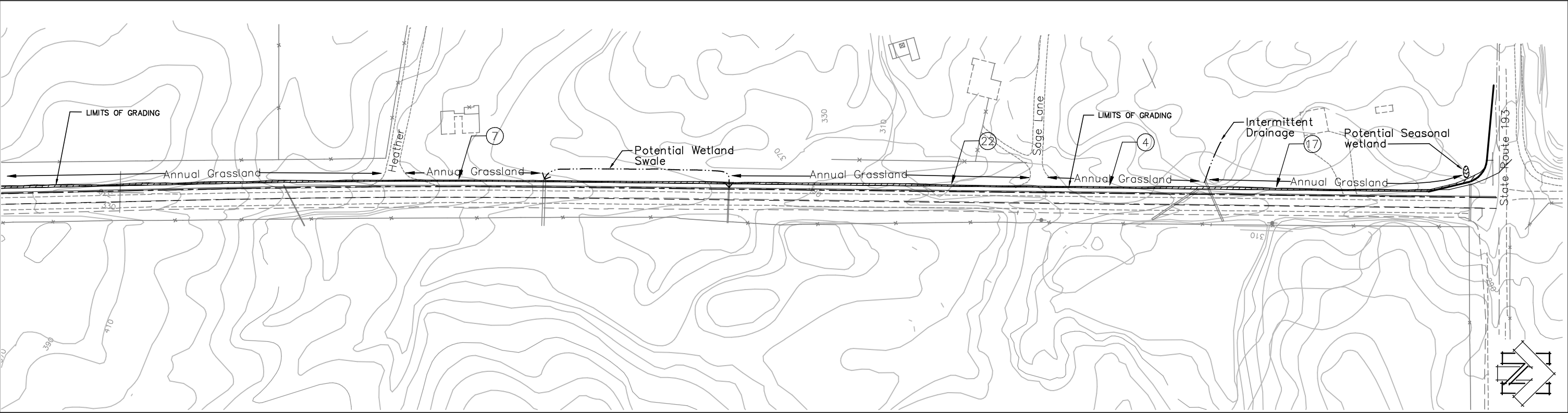
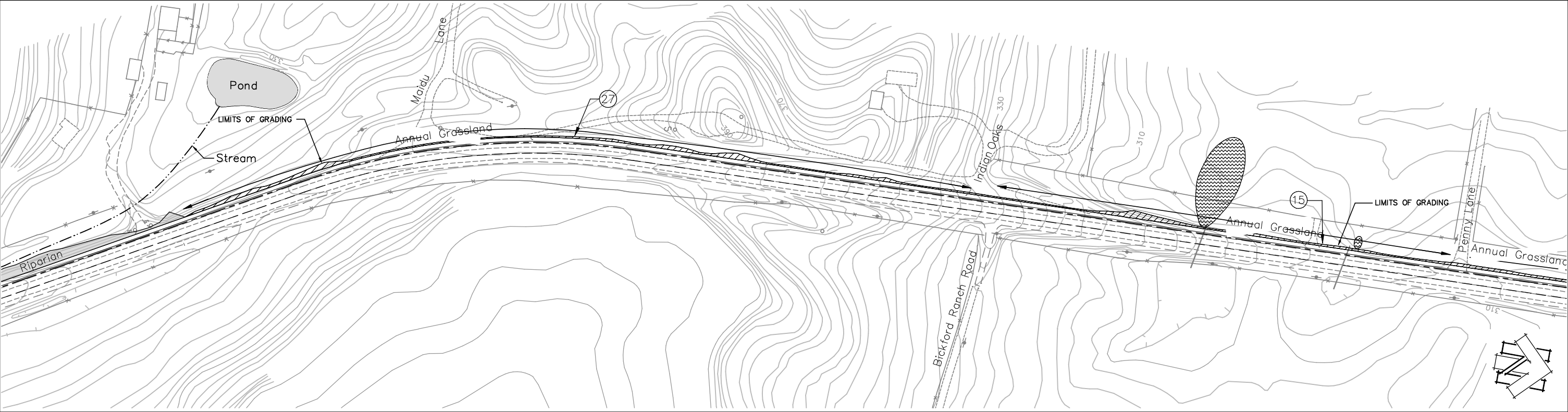
0 100 200  
SCALE IN FEET

# ALTERNATIVE 7 BIOLOGICAL RESOURCES

1999 Bickford Ranch Specific Plan EIR  
Job No. 21305-002-038 Placer County, California







FIGURE 16-7a

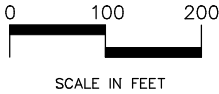


SOURCES: GW Consulting Engineers and  
Jones & Stokes Associates, Inc.

#### LEGEND

-  Riparian Valley Foothill Riparian
-  Potential Seasonal Wetland
-  (20) Approximate Number of Protected Oak Trees
-  Area to be Graded

**BICKFORD**  
RANCH



#### ALTERNATIVE 7 BIOLOGICAL RESOURCES

1999 Bickford Ranch Specific Plan EIR  
Job No. 21305-002-038 Placer County, California



FIGURE 16-7b

**Waters of the United States:** The following features that are potential waters of the United States occur within the Sierra College Boulevard right-of-way:

- Approximately 0.01 acre of seasonal wetland vegetation is present within the right-of-way along the northern section of the road, generally occurring near culverts where runoff most likely ponds during storm events. Vegetation includes the species already mentioned, as well as rabbitsfoot grass, curly dock, willow herb, umbrella sedge, and dallisgrass.
- Approximately 0.1 acre of wetland swale dominated by Himalayan blackberry connects two culverts within the right-of-way.
- The drainage on the southwest corner of the project site crosses under the road in a culvert and continues adjacent to the northwest side of the road. Approximately 0.1 acre of the drainage is within the right-of-way. This drainage supports approximately 0.4 acre of riparian vegetation dominated by oaks and drains to a pond outside of the right-of-way.
- On either side of the intersection of Twelve Bridges Drive with Sierra College Boulevard are two depressions, totaling approximately 0.2 acre within the right-of-way, that support potential riparian wetlands. These depressions are isolated features that are not connected to drainages.

**Oak Trees:** Within the Sierra College Boulevard right-of-way, approximately 200 oaks and native trees with a DBH of 6 inches or greater were identified.

### Impacts

The following impact analysis addresses construction impacts only. No significant change to biological resources during the operation phase of the Sierra College Boulevard widening are anticipated. Based on the following construction phase impacts, the proposed project would be preferred over Alternative 7.

**Annual Grassland:** Construction to widen Sierra College Boulevard would result in the loss of less than five acres of annual grassland. For the reasons discussed in Chapter 13 under Impact B-1 for the project site, and because the grassland adjacent to the road is vegetated primarily by star thistle and other weedy species, the loss of annual grassland as a result of this alternative is considered less than significant, and no mitigation is required.

**Blue Oak Woodland:** Construction to widen Sierra College Boulevard would affect primarily individual trees and not areas of contiguous woodland. Impacts on individual oak trees and mitigation are discussed below.

**Valley-Foothill Riparian:** Up to approximately 0.4 acre of riparian vegetation would be removed for construction to widen Sierra College Boulevard. For the reasons discussed in Chapter 13 under Impact B-4 for the project site, the loss of riparian vegetation as a result of widening Sierra College Boulevard is considered significant. Application of Mitigation Measures G-B (Prepare and implement an erosion control plan), H-D (Prepare and implement a Storm Water Pollution Prevention Plan for construction activities), B-B (Hire a project biologist), B-A (Implement the Applicant's oak forest conservation and revegetation plan), and B-D (Implement a tree protection plan) would reduce this impact to a less than significant level.

**Special-Status Species:** The Sierra College Boulevard widening construction area has low potential to support special-status plants, and no significant impacts to special-status plants or their habitats are anticipated. Streams and drainages along Sierra College Boulevard are considered potential California red-legged frog habitat. Widening the road could harm red-legged frogs if they occur in the area and road widening could degrade suitable habitat. Implementing Mitigation Measures G-B (Prepare and



implement an erosion control plan), G-A (Comply with Placer County ordinances for all grading, drainage, and construction of improvements), H-D (Prepare and implement a Storm Water Pollution Prevention Plan for construction activities), H-K (Monitor erosion and sediment control measures during construction), B-B (Hire a project biologist), B-E (Implement the Applicant's wetland preservation and impact plan), B-O (Obtain and implement conditions of state and federal permits for impacts to waters of the United States), B-P (Protect wetlands during construction), and B-K (Prepare and implement a California red-legged frog mitigation plan) would reduce this impact to a less than significant level.

**Waters of the United States:** Up to approximately 0.5 acre of wetlands and other waters of the United States could be lost because of the Sierra College Boulevard widening. For the reasons discussed in Chapter 13 under Impact B-13 for the project site, the loss of wetlands and other waters would be a significant impact. Additional significant indirect impacts on adjacent jurisdictional areas could occur during construction, as discussed under Impact B-13.

No delineation of the Sierra College Boulevard widening project area has been conducted. Before quantifying a final impact acreage and determining the amount of required mitigation, a delineation of wetlands and other waters according to current Corps protocol is necessary. Implementing Mitigation Measures G-B (Prepare and implement an erosion control plan), G-A (Comply with Placer County ordinances for all grading, drainage, and construction of improvements), H-D (Prepare and implement a Storm Water Pollution Prevention Plan for construction activities), H-K (Monitor erosion and sediment control measures during construction), B-B (Hire a project biologist), B-C (Implement the Applicant's wetland preservation and impact plan), B-O (Obtain and implement conditions of state and federal permits for impacts to waters of the United States), and B-P (Protect wetlands during construction) would reduce this impact to a less than significant level.

**Oak Trees:** Up to approximately 200 native trees, mostly native oaks, could be affected due to the widening of Sierra College Boulevard. The majority of these trees would be indirectly affected due to construction activity within the tree driplines. Up to approximately 50 trees would be removed to accommodate the roadway. For the reasons discussed in Chapter 13 under Impact B-2 for the project site, the loss of protected oak trees would be a significant impact.

Application of Mitigation Measure B-B (Hire a project biologist), B-A (Implement the Applicant's oak forest conservation and revegetation plan), and B-D (Implement a tree protection plan) would reduce the significance of this impact. However, the loss of mature trees would remain a significant and unavoidable impact because there is no available mitigation to replace mature trees in the short term.

## Cultural Resources

### Setting

Improvements to portions of the western edge of Sierra College Boulevard would occur with this alternative. The area proposed for improvements was included in the Windmiller records search conducted for the proposed project (Windmiller, 1998a). No sites were found to have been recorded. These areas were visually inspected on November 19 and 20, 1998 (Dames & Moore, 1998). Parallel transects, each approximately 20 meters apart, were utilized to inventory the area. In locations where vegetation obscured the ground surface, 20 cm × 20 cm patches were occasionally cleared utilizing hand tools or footwear to increase ground visibility. No additional cultural resources were identified as a result of this reconnaissance.

## Impacts

As no cultural resources were identified within these areas, no impacts to known cultural resources would occur with this alternative. Impacts to paleontological remains would not occur with this alternative as no Mehrten lahars occur along this section of Sierra College Boulevard.

There is no clear preference between Alternative 7 and the proposed project.

## Visual Quality

### Setting

Sierra College Boulevard extends from SR 193 south to the Placer/Sacramento County line. This alternative would border Sierra College Boulevard for approximately 2.5 miles, at a point where the terrain within the study area transitions from relatively flat to steep hills and ridges. The northern portion of Sierra College Boulevard extends through flat terrain, and allows for distant views within the project site and beyond. The terrain becomes more steep and rolling further south along Sierra College Boulevard, and views to the project site are more confined due to local terrain changes. Existing large roadway cuts are evident along Sierra College Boulevard between Twelve Bridges Road and English Colony Way.

## Impacts

The proposed widening of Sierra College Boulevard would result in strong contrast in select areas of large cut and fill slopes. These cuts could appear angular and uncharacteristic within the existing terrain. The largest cut and fill slopes (up to 80 feet tall, 2:1 slopes) would occur between Maidu Lane and English Colony Way. These cut and fill slopes would be most evident to travelers along Sierra College Boulevard, but would also be visible from dispersed rural residences adjacent to Sierra College Boulevard, and future residences within the Meadows development. Application of Mitigation Measure V-B (Implement sensitive grading techniques to blend with natural setting), in addition to implementing sensitive clearing and thinning of vegetation along the cut and fill slopes, would reduce this impact to a less than significant level. The proposed project is preferred over Alternative 7.

### 16.1.3 Summary of Alternatives Analysis

Table 16-51 summarizes the comparison of the alternatives to the proposed project by environmental issue area, and provides an indication of overall environmental superiority of either a given alternative or the proposed project. The analysis involved a qualitative process which did not result in equal weighting of impacts.

The alternatives analysis concluded that the No Project Alternative is generally environmentally superior to the proposed project and all other alternatives. Among the “action” alternatives, the Reduced Density alternative (Alternative 4) would be the environmentally superior “action” alternative. Most alternatives that “add” a component to the proposed project result in additional impacts, while retaining most or all of the impacts of the proposed project.

**Table 16-51  
Summary of Alternatives Analysis**

Issue Area	No Project (Alt. 1)	Reduced Density (Alt. 2)	Conventional Housing (Alt. 3)	Rural Residential (Alt. 4)	Clark Tunnel Road (Alt. 5)			Affordable Housing (Alt. 6)	Sierra College Boulevard (Alt. 7)
					1	2	3		
Land Use	☐	■	■	●	●	●	●	☐	●
Population and Housing	■	●	■	■	●	●	●	☐	●
Public Services and Utilities									
Water	☐	☐	●	■	●	●	●	■	●
Wastewater	☐	■	■	■	●	●	●	■	●
Electricity/Gas/Energy	☐	☐	☐	☐	●	●	●	■	●
Parks and Recreation	☐	■	■	●	●	●	●	■	●
Other Community Services	☐	●	☐	☐	●	●	●	■	●
Traffic and Circulation	☐	☐	■	☐	■	■	■	●	●
Air Quality	☐	☐	■	☐	●	●	●	■	☐
Noise	☐	☐	■	☐	■	■	■	■	●
Soils, Geology, and Seismicity	☐	☐	■	☐	■	●	■	■	●
Hazardous Waste/Materials	☐	☐	☐	☐	■	■	■	■	●
Hydrology and Water Quality									
Hydrology	☐	●	☐	☐	●	●	●	■	●
Water Quality	☐	●	☐	■	●	●	●	■	●
Biology	☐	■	■	☐	■	●	■	■	■
Cultural Resources	☐	■	■	■	●	●	■	●	●
Visual Quality	☐	■	■	☐	■	■	■	■	■
Preference	☐	☐	■	☐	■	■	■	■	●

Key:

Shaded cells indicate significant or potentially significant impacts attributed to an alternative that are not attributed to the Proposed Project.

■ Proposed Project preferred over the alternative

☐ Alternative preferred over the Proposed Project

● No clear environmental preference between the alternative and the Proposed Project.

## 16.2 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IMPACTS

The potential environmental impacts that would result from implementation of the proposed project are summarized in Table 2-1 in Chapter 2 of this Draft EIR. In some cases, impacts that have been identified would be less than significant. In other instances, incorporation of the mitigation measures proposed by the Applicant would reduce the impacts to levels that are less than significant. If Applicant-proposed mitigation would not reduce the impacts to a less than significant level, this Draft EIR recommends additional mitigation measures to reduce impacts to a less than significant level, where feasible. Finally, those impacts that cannot be mitigated to a less than significant level would remain as significant unavoidable adverse impacts. They are listed below.

- Conversion of land use from agricultural and open space to residential, recreational and commercial use
- Increased demand for public schools (potentially significant in the short term)
- Under 2010 General Plan conditions, I-80 west of Sierra College Boulevard and between Penryn and SR 49 would operate at LOS "F" conditions with or without the proposed project, based on a daily roadway segment level of service analysis (potentially significant)
- Potential unmet transit needs generated by the proposed project (potentially significant)
- Increase in regional criteria air pollutant emissions (short term)
- Inconsistent with the goals of the Placer County Air Quality Attainment Plan
- Sound level increases at noise-sensitive locations during construction (short-term)
- Loss of oak and other native trees
- Loss of oak woodland habitat
- Alteration of viewsheds for views to the northwest
- Reduction in visual quality within the study area
- Increase in night lighting in the project vicinity (potentially significant)
- Increase in glare in the project vicinity (potentially significant)
- Cumulative impacts related to
  - loss of open space
  - increased traffic congestion
  - increased traffic noise
  - increased ozone precursors and particulate emissions
  - biological resources
  - visual resources

These impacts are primarily short-term and/or construction related; with mitigation and over time the effects of many of these impacts would be reduced. These impacts are considered an unavoidable adverse consequence of fulfilling the objectives of the proposed project.

## 16.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Implementation of the proposed project would result in the short-term commitment of non-renewable and/or slowly renewable energy resources and natural resources including lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, and water due to construction activities. As the community develops, both residential and non-residential development would require further commitment of energy resources in the form of natural gas and electricity generated by coal or hydroelectric power. Increased motor vehicular travel as a result of the increased commitment of social services and public maintenance services (e.g., waste disposal and treatment) would also be required.

Development of the proposed project site would result in an irreversible environmental effect as the site is not likely to revert to its original condition. This is particularly irreversible for the Mehrten mudflows in the Heritage Ridge area which would be ripped during construction. Developing currently vacant or agricultural land would result in a significant, irreversible environmental effect on biological resources and agricultural land. The construction and operation of the proposed project would also allow public access to previously inaccessible areas. This public access would not result in the loss of plant or animal species, but it would involve the loss of individual plants and animals.

### 16.4 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

The California Environmental Quality Act (CEQA) Guidelines require an EIR to evaluate the indirect or secondary effects of a project which may include growth-inducing effects. Section 15126(g) of the CEQA Guidelines states that a project could be considered growth-inducing if it could “foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” A development project may have growth-inducing potential if, for example, 1) it extends infrastructure (e.g., water, sewer roads, etc.) to undeveloped areas or increases the capacity of existing infrastructure; 2) promotes similar development to occur on adjacent parcels; 3) increases the area’s housing supply; or 4) introduces new employment to an area.

In the absence of other favorable conditions, however, it is unlikely that any one of these components, by itself, could induce significant growth. The magnitude, location and timing of growth are ultimately determined by a mix of economic, political, physical and social factors. Variables including regional economic trends, housing demand, land availability and cost, quality of infrastructure and public services, proximity to employment centers, and regulatory considerations affect the way in which growth occurs.

This chapter evaluates the extent to which growth could be induced, accelerated, intensified or shifted as a result of developing Bickford Ranch. Key growth issues associated with this project are:

- Additional residential development which could occur on vacant or underutilized lands adjacent to the project;
- Changes in the use of the area’s agricultural land, some of which is currently under Williamson Act contracts; and
- Commercial development and employment which could occur as a result of increased population.

Section 15126(g) of the CEQA Guidelines provides the framework for a discussion of these potential growth-inducing impacts as follows:

1. *Would the project foster economic or population growth or the construction of additional housing?*
2. *Would the project remove obstacles to population growth?*
3. *Would the project tax existing community facilities?*
4. *Would the project encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively?*

The Placer County General Plan (PCGP), which was adopted in 1994, provides for development of the Bickford Ranch Specific Plan area as a planned residential development. Placer County General Plan's

Appendix C outlines the County's development standards for the project site, allowing considerably higher density than for the surrounding unincorporated parcels.

Constraints to growth in the study area were evaluated qualitatively based on 1) existing land use designations and land uses, and 2) the capacity of proposed infrastructure improvements—particularly the extension of water and sewer lines to the project site. These elements were determined to be key in determining whether the project would induce additional growth beyond that anticipated in the General Plan.

#### **16.4.1 Current Constraints to Growth**

The principal constraints to substantial new growth in the study area are 1) General Plan land use designations and existing land uses; 2) Williamson Act contracts; and 3) lack of infrastructure. Parcels surrounding the project site are designated in the PCGP for Rural Residential (1 to 10-acre minimum) or Agriculture/Timberland (10-acre minimum) development. Most parcels have been developed as large lot residences with agricultural uses as cultivated orchards or rangeland. Approximately 536 acres in the study area are under Williamson Act contracts for which no non-renewal requests have been filed.

Since no sewer lines extend to these areas, residential development relies on individual septic systems. Domestic water is provided by wells, while irrigation water is received via PCWA canals. The absence of wastewater collection facilities (i.e., community septic system or sewer) acts as a constraint to large-scale development in the study area.

#### **16.4.2 Removal of Growth Constraints**

##### **Changes in Land Use**

The proposed project has the potential to increase development pressures on surrounding properties by shifting from agricultural residential to suburban-style development. This effect would be contained, for the most part, by General Plan land use designations, current zoning, and existing residential development. It is possible that the project could encourage landowners to subdivide nearby properties into smaller parcels. However, given the sizes and ownership distribution of these parcels, it is unlikely to lead to large-scale conversion of land to suburban uses—subdivision would likely occur on a smaller parcel-by-parcel basis.

The project could foster a slight expansion in new economic growth in the region. While project approval would not result in the creation of any basic industry jobs, the addition of residents would result in a demand for supporting retail services. The village commercial center proposed with Bickford Ranch would primarily serve residents and golf course patrons; this limited retail/commercial component of the project is unlikely to induce additional residential growth. Furthermore, since no other land in the study area has been designated for retail/commercial use, the construction of the Village Center is not expected to prompt further commercial development outside the project.

The Placer County General Plan designates the project site for planned residential development, as is proposed with this project, while surrounding properties are intended to remain rural and agricultural. The PCGP EIR acknowledged that any general plan's designation of undeveloped land for future development could be considered growth-inducing. However, the change in land uses resulting from development of Bickford Ranch is not expected to induce substantial growth.

### Infrastructure Development

The proposed roadway improvements would occur primarily within the project boundaries and would not include major frontage improvements to Sierra College Boulevard or SR 193. The principal off-site improvement would be a signalized intersection at Sierra College Boulevard and Bickford Ranch Road. Construction of this intersection is not likely to affect growth in the study area. No commercial services would be constructed at this location, nor would the intersection create opportunity for commercial development opposite Bickford Ranch Road on the west side of Sierra College Boulevard. This access into the development would primarily serve residents and visitors to Bickford Ranch.

Piped domestic water, which is currently unavailable in the study area, would be provided by Placer County Water Agency (PCWA). Expansion of the water delivery system north and west of Penryn, including a major pipeline in the vicinity of Bickford Ranch, has been planned for by the Agency. As a separate project, PCWA is planning improvements to the Antelope Canal facilities, which currently provide raw water to the project site and adjacent parcels. Although this planned pipeline expansion could combine with wastewater improvements to facilitate development, it alone is unlikely to induce or accelerate growth in the study area.

The City of Lincoln proposes to provide off-site wastewater conveyance and treatment for Bickford Ranch upon completion of improvements to its wastewater treatment plant (WWTP) in 1999. The upgraded plant would have capacity to serve up to 790 of the project's proposed 1,950 dwelling units. Subsequent completion of a new regional WWTP in 2003 would provide the additional capacity needed to serve the entire project without constraining the needs of existing customers or other anticipated growth in the region.

The City's Public Facilities Element has planned for this WWTP expansion and will construct the improvements with or without Bickford Ranch. A Joint Powers Authority (JPA) consisting of Placer County, the cities of Lincoln and Auburn, South Placer Municipal Utility District and the Newcastle Sanitary District has been formed to design and construct a regional sewer system. This future regional system would accommodate the proposed project but, as with Lincoln's WWTP upgrades, is planned to go forward whether or not Bickford Ranch is approved.

The project proposes construction of a 12-inch pipeline along SR 193 to Ferrari Ranch Road. However, the Applicant could construct a 42- to-60-inch sewer pipeline if the JPA that was formed to design and construct a regional sewer system has completed the pipeline design in the timeframe that this improvement is needed by the Applicant. If the larger pipeline is constructed, the Applicant would be reimbursed on a pro-rata basis. Since the Bickford Ranch development would only construct a 12-inch line, this would not be growth-inducing. If the larger pipeline were constructed, it would be sized to meet the design of the JPA.

### 16.5 CUMULATIVE IMPACTS

"Cumulative impacts" refers to two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts (CEQA, Section 15355, 1992). The individual effects may be changes resulting from a single project or many separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant impacts taking place over time.

The cumulative impact scenario for the Bickford Ranch Specific Plan project considers 2010 development as identified in the Placer County General Plan Update (Crawford Multari & Starr et al., 1994a), plus the development of the proposed project, the Twelve Bridges Specific Plan project and the Clover Valley Lakes project. The General Plan Update assumptions for growth are contained in the County's *Land Use Diagram* prepared as part of the update process. For South Placer County, these assumptions are shown in Table 16-52.

**Table 16-52  
Development Scenarios  
South Placer County**

<b>Population and Employment</b>	<b>1990</b>	<b>2010</b>
Household Population <sup>1</sup>	21,319	44,375
Wage & Salary Employment <sup>2</sup>	5,653	17,495

Notes:

<sup>1</sup>County Assessor's data base summaries of dwelling units by community plan area and vacancy rate and persons-per-household factors from the 1990 Census.

<sup>2</sup>Estimate is for 1991, based on State of California Employment Development Department (EDD) estimate of total wage and salary employment in the County, distributed using estimates of building space using the County Assessor's data base and standardized estimates of vacancy rates and employment density by use.

Source: Placer County General Plan Update EIR, Crawford Multari & Starr et al., 1994

The EIR for the General Plan Update states that, based on the assumptions in the 2010 scenario, "South Placer County becomes a more "urban" area, with a relatively larger supply of jobs, services, and shopping opportunities for residents than currently exists [1994]. ...This is an important objective of the Countywide General Plan, as well as of the general plans of Placer County cities..." (Crawford Multari & Starr, et al., 1994). The proposed project contributes to meeting these objectives, and also to some of the cumulative environmental impacts identified in the General Plan associated with the 2010 development scenario.

The Twelve Bridges Specific Plan Area is generally bounded by SR 65 on the west, SR 193 on the north, Sierra college Boulevard on the east and the City of Lincoln City limits on the south. The Plan Area encompasses approximately 4,864 acres of the Twelve Bridges property as well as the western 441 acres of East Lake Specific Plan area and all 401 acres of the East Ridge Specific Plan area, for a total of 5,706 acres. This development would include 10,075 dwelling units of which 5,300 would be age-restricted units, on 2,578 acres, distributed as follows:

Very Low Density	615 units
Low Density	6,675 units
Medium Density	1,585 units
High Density	1,200 units

Other components of the Twelve Bridges Specific Plan include both general commercial and village commercial areas, an Employment Center, a Community College campus, up to three golf courses, two community parks and distributed neighborhood parks and open space. The development is expected to generate a total population of 21,995 residents and 6,745 jobs (EIP Associates, 1997).

The Clover Valley Lakes project is located along the west side of Sierra college Boulevard, generally between the terminus of Rawhide Road on the south and North Clover Valley Road/Creekside Road on



the north in Placer County. The project includes approximately 642 acres of vacant land. This development will include 974 low and medium density residential units on 492 acres. The project would also include a small retail/commercial area, two parks, and open space.

When considered with other reasonably foreseeable projects, cumulative impacts to some resources would be significant and more severe than those caused by the proposed project alone. The EIR for the Placer County General Plan Update concluded that in eight major areas the development considered in the General Plan, taken as a whole, will result in potentially-significant or significant adverse impacts to land use, traffic congestion, cultural resources, loss of farmland, loss of agricultural reduction, habitat conversion and habitat quality reduction, increase in air pollutant emissions, and traffic noise. The proposed project would contribute to cumulative impacts in the areas of land use, traffic congestion, traffic noise, increase in air pollutant emissions, habitat conversion and habitat quality reduction, and visual resources.

The potential for the proposed project to contribute to cumulatively significant impacts for each resource area considered in this Draft EIR is discussed below.

### **Land Use**

The current trend in residential development in south Placer County includes the conversion of substantial open space areas in the City of Lincoln (Twelve Bridges) and the City of Rocklin (Clover Valley Lakes). Located adjacent to the Twelve Bridges project but physically separated from the Clover Valley project, Bickford Ranch Specific Plan Area is an extension of this land use trend and will cumulatively contribute to the loss of open space in the region. As concluded in the Placer County General Plan EIR and the Twelve Bridges Specific Plan EIR, this loss of open space is considered significant and unavoidable.

Implementation of this project will not interrupt the contiguity of crop production or significantly reduce the County's livestock production. Therefore, efficiency of agricultural production will not be reduced as a result of this project. Farmland proximate to the site may be protected from further encroachment by (1) contracts legally binding the owner, and (2) zoning regulation. These are the most certain methods of keeping the land under cultivation. If an owner is legally bound under Williamson Act contracts, the land is committed to agricultural production incrementally for 10-year periods. However, this method of protecting agricultural land is at the discretion of the landowner; there is no way to legally require entry into such a contract. It is uncertain whether denial of the proposed project would prompt landowners to rescind their requests for non-renewal of their contracts. Currently, there are no additional incentives in place, which would reverse the current trend of nearby landowners to file for non-renewal status.

Further development of adjacent farmland may be precluded by current zoning designations. Although it does not legally compel the landowner to farm, the landowner may find it economically beneficial to keep the land in active production if other uses are precluded. Development constraints through zoning is considered an impermanent measure, however. Existing land use designations keep the presently cultivable lands free of development and available to agriculture only until the general plan and its zoning ordinance provisions are amended or updated.

### **Population, Employment and Housing**

Increases in population generated by the project could have an indirect effect on other resources, however, such as increased traffic leading to traffic congestion. This type of impacts is considered in the individual resource analyses below. All other adverse impacts directly resulting from increases in population and from new employment generated by the project are less than significant. The impact on affordable housing and the jobs/housing balance resulting from the proposed project would be less than

significant, because the Applicant proposes to pay in-lieu fees to meet the County's affordable housing requirement. Placer County policies requiring new development to contribute to the County's affordable housing goals would serve to mitigate impacts of future development on affordable housing. Cumulative impacts to population, employment and housing were not identified in the Placer County General Plan Update Final EIR, the Twelve Bridges Specific Plan EIR or the Clover Valley Lakes EIR. In addition, the new development associated with the proposed project would not result in significant adverse impact to population, employment or housing, individually or cumulatively, therefore it is concluded that the proposed project would not have a cumulatively significant adverse impact on population, employment and housing.

## Public Services and Utilities

**Water.** PCWA's current surface water entitlement is 292 mgd. The 2010 water demand is estimated to be 172 mgd without the proposed project, and the projected demand for 2040 is 201 mgd. While the 2010 projection includes future development, it does not include full buildout of the proposed project, the Twelve Bridges project and Clover Valley Lakes. Conservatively adding the entire demand for these three projects to the 2010 projections, the total surface water demand in the cumulative scenario would be 182 mgd (the proposed project would add 2.24 mgd to this projection, Twelve Bridges would add 7.1 mgd, and Clover Valley Lakes would add 0.84 mgd). Supply appears adequate to meet the cumulative demand of the proposed project plus future development. Significant cumulative impacts to domestic water systems are not expected to occur.

Treatment capacity at the Sunset and Foothill water treatment plants will need to be expanded as development progresses within the respective service areas, and additional water treatment facilities may need to be constructed to serve future development. Additionally, the proposed project would, in conjunction with other development through the years 2010 and beyond, result in a need to extend and upgrade Placer County's water distribution system. Additional pipelines and/or increases in the size of existing pipelines would be needed to ensure adequate pressure for fire flow and potable water requirements. The goals and policies set forth in the Placer County General Plan limit new development to those projects that can demonstrate adequate water supply, treatment, and distribution capacity; and require developers to share the cost of infrastructure improvements needed to ensure an adequate, reliable, and safe water supply. The proposed project includes Mitigation Measure PS-A which requires the Applicant to participate in the Penryn/Lincoln/Sunset pipeline if sufficient pipeline hydraulic capacity does not exist or will not exist at the time of water connection. If this mitigation measure is carried through to future development and the project-specific mitigation measure PS-A is implemented, significant cumulative impacts to domestic water systems are not expected to occur.

The proposed project would, in conjunction with other future development, affect PCWA's raw water supply and distribution system (which includes Penryn, Caperton, and Antelope canals). PCWA's current agreement with PG&E is for 78 cfs (3125 miner's inches or 50 mgd). Additional water could be purchased from PG&E, but the cost would likely be greater than that under the current agreement. Raw water is only used for irrigation, and PCWA envisions that the US EPA will ultimately require treatment of all water delivered to its customers. Until that time, PCWA will continue to deliver raw water only as adequate supply and distribution system hydraulic capacity permit. Capacity improvements will continue to be funded by both PCWA and major development projects, and PCWA may ultimately enter into a supplemental agreement with PG&E, depending on customer demand and economic considerations. The Applicant has participated in hydraulic capacity improvements to Caperton Canal and PCWA is planning to construct capacity improvements to the Antelope Canal as a separate project. If these actions are carried through, significant cumulative impacts to Caperton and Antelope canals are not expected to occur.

The proposed project includes a minimal number of individual domestic wells, and Placer County General Plan policy encourages use of surface water supply for new developments. In accordance with General Plan policies, additional future demand on local groundwater resources will be limited to rural development with low population densities where safe and reliably adequate supply can be demonstrated. If the General Plan policies are carried through to future development, these mitigation measures would reduce cumulative impacts to groundwater supply to a less than significant level.

Because the new development associated with the proposed project would not result in significant adverse impacts individually or cumulatively, and cumulative impacts to water supply were not identified in the Placer County General Plan Update EIR, the Twelve Bridges Specific Plan EIR or the Clover Valley Lakes EIR, it is concluded that the proposed project would not have a cumulatively significant adverse impact on water.

**Wastewater.** The current capacity of the LWWTP is 1.4 mgd; an increase to 2.4 mgd is planned in 2001. Depending on planning efforts currently underway, construction of the new RWWTP may provide a total treatment capacity of 5.6 mgd by 2007, which is more than adequate to meet projected demands through that time. The proposed project would add 0.45 mgd at buildout, and Twelve Bridges would add 6.1 mgd, including the commercial centers and the employment center. The EIR for the Twelve Bridges project concludes that it would generate 2 mgd more than the existing facility could treat under dry weather conditions. Both the Twelve Bridges project and the proposed project have identified mitigation measures to ensure that development does not occur without ensuring that adequate facilities are in place to handle the increase in flows. Clover Valley Lakes would send their wastewater to Roseville, so it would not be an additional demand on the Lincoln system.

Placer County, in conjunction with other local governments, has formed a Joint Powers Authority which may ultimately develop a regional Master Plan for wastewater conveyance and treatment systems. The Applicant would fund construction of necessary wastewater conveyance systems, and General Plan policies require developers demonstrate adequate capacity prior to project approval. As the role of the JPA becomes more defined, Placer County and/or the JPA should consider measures to provide for long-term wastewater treatment needs and minimize flows to wastewater treatment systems (i.e., control of sewer inflow and domestic/industrial water conservation). If Placer County General Plan policies are carried through to future development and the project-specific mitigation measures (Mitigation Measures PS-C through PS-H) presented in Section 6.4.2 of this Draft EIR are implemented, significant cumulative impacts to wastewater conveyance and treatment capacity are not expected to occur.

**Electricity/Gas/Energy.** The proposed project, along with future development, is expected to increase demand for electricity, natural gas and other energy sources. Additional electrical power is purchased on an as-needed basis; supply is not expected to be a problem. Likewise, there is an abundant supply of natural gas. Distribution facilities would be constructed as needed to serve future development. While no federal, State or local laws or regulations set specific quantitative thresholds for determining a significant energy impact, CEQA normally deems as significant any project that encourages activities that result in the use of large amounts of energy or fuel, or any project that uses energy in a wasteful manner. The proposed project would not use inordinate amount of energy or use energy in a wasteful manner. Placer County has a number of General Plan policies requiring efficient energy use. Because the new development associated with the proposed project would not result in significant adverse impacts individually or cumulatively, and cumulative impacts to electricity, gas and energy were not identified in the Placer County General Plan Update EIR, the Twelve Bridges Specific Plan EIR or the Clover Valley Lakes EIR, it is concluded that the proposed project would not have a cumulatively significant adverse impact on electricity, gas or energy.

**Parks and Recreation.** Placer County General Plan requires a minimum of five acres of active-use parkland and five acres of open space (passive recreation) per 1,000 residents to reduce anticipated impacts on parks and recreational facilities. The proposed project substantially exceeds the County's park and recreation requirement to eliminate impacts associated with insufficient park and recreation facilities. The General Plan requires parks construction to be phased so as to be available as adjacent residential uses are developed; the Applicant has complied with this requirement in the proposed project's Phasing Plan. Because the new development associated with the proposed project would not result in significant adverse impacts individually or cumulatively and cumulative impacts to parks and recreation were not identified in the Placer County General Plan Update EIR, the Twelve Bridges Specific Plan EIR or the Clover Valley Lakes EIR, it is concluded that the proposed project would not have a cumulatively significant adverse impact on parks and recreation.

**Other Community/County Services.** The County General Plan policy states that the County shall ensure that adequate public facilities and services are available to serve new developments.

The County's financial analysis does not conclude that the proposed project would have an adverse effect on the County's ability to finance the needed increases in County services. The Placer County General Plan provides policies and facility funding options to ensure that the County will be able meet its facility and service objectives associated with all development in a timely manner, and to maintain adequate levels of service. With the implementation of these policies and funding mechanisms, cumulative impacts would be less than significant.

The cumulative impacts of the proposed project and other developments on the local school districts may be significant in the short-term if the population grows faster than the facilities can be developed to serve the population. The school districts' ability to collect school fees would eventually mitigate the cumulative impacts to a less than significant level.

The proposed project would contribute to the need for additional fire protection services, particularly due to the physical constraints posed by its topography. The proposed project would contribute to alleviating cumulative effects by providing a location for a new fire station on-site, and constructing and partially equipping it. Ongoing operations and maintenance will be provided through the collection of a special tax levied on the annual property taxes for each property owner. In the short term, the proposed project could result in significant short-term impacts relating to meeting fire response standards, because of the distance existing fire fighting facilities are located from the project site. However, with the construction of a new fire station on the fire station site within the proposed project area, the resulting contribution to cumulative impacts associated with fire protection would be less than significant.

While the proposed project would contribute to the increase in solid waste generation due to development, Placer County General Plan policies and compliance with the Integrated Waste Management Act (AB 939) are expected to result in less than significant impacts to the existing WRSL, which has capacity to the year 2050.

Other community services such as telephone and cable services would expand service to meet demand; and no cumulatively significant impacts are anticipated.

## **Transportation and Circulation**

Section 7.3.8 describes the traffic impacts of the proposed project under the Buildout of Project Vicinity scenario. This scenario identified traffic impacts associated with adding full buildout of the proposed project, the Twelve Bridges project, and the Clover Valley Lakes project to the 2010 development levels assumed in the Placer County General Plan EIR.

These projects represent all of the major development projects along Sierra College Boulevard north of Taylor Road that are allowed under the general plans of Placer County, Rocklin, Lincoln and Loomis. This analysis effectively considers the cumulative condition as defined in this analysis. Some of the development in these three large developments would likely occur after 2010, so the analysis in Section 7.3.8 is likely conservative.

Development of the proposed project would result in an increase in traffic. While project-specific mitigation measures have been identified to reduce the proposed project's effect on increased levels of service, the addition of more traffic on already congested roadways would not alleviate the existing adverse cumulative condition. The Placer County General Plan Update EIR identified adverse impacts on traffic congestion as significant, as did the Twelve Bridges Specific Plan and Clover Valley Lakes EIRs. Although the policies and programs of the County's *Policy Document* would partially mitigate the effects of development on traffic congestion, they would not reduce the impacts to a less than significant level. Development of the proposed project would result in a substantial increase in traffic and traffic congestion. Implementation of the mitigation measures recommended in this Draft EIR would mitigate each individual traffic impact of the proposed project to a less than significant level. Although less than significant individually, the combined effects of these impacts would, when combined with other development, contribute to cumulatively significant traffic congestion identified in the Placer County General Plan Update EIR, the Twelve Bridges Specific Plan EIR and the Clover Valley Lakes EIR. Therefore, the cumulative impact of the project on traffic congestion is considered significant and unavoidable.

### **Air Quality**

Cumulative development would result in construction emissions from earthmoving activities, heavy duty equipment operation, workers traveling to and from the construction sites, and miscellaneous activities such as road and parking lot paving and architectural coating application to commercial and residential structures. Earthmoving activities could result in substantial fugitive dust (PM<sub>10</sub>) emissions, and would be likely to generate localized particulate concentrations in excess of state or federal standards. Dust emissions would depend on soil type and moisture content. A major portion of the PM<sub>10</sub> would settle on or immediately adjacent to construction sites, while a portion would contribute to regional ambient particulate concentrations. Construction equipment operation and construction employee vehicle trips would generate exhaust emissions, including CO, ROG, NO<sub>x</sub>, SO<sub>2</sub>, and particulates. Painting and roadway paving activities would primarily release ROG into the atmosphere.

General Plan policies related to construction emission control are designed to reduce construction-related impacts. Despite implementation of these policies, construction activities would generate unavoidable, temporary increases in the non-attainment pollutants and their precursors. The proposed project would, on a short-term basis, contribute to a significant cumulative air quality impact associated with development construction.

The General Plan contains policies aimed at reducing air quality impacts associated with motor vehicles. Traffic generated by cumulative development would increase local carbon monoxide concentrations at congested intersections and along heavily traveled roadways. Carbon monoxide concentrations would be higher during cooler months, as lower ambient temperatures contribute to higher CO concentrations, and would be greatest in areas with high traffic volumes and low average speeds. Background CO concentrations in lower Placer County are generally low. Future roadside CO concentrations are expected to decrease despite anticipated increases in vehicle volumes; lower CO concentrations are expected as a result of improved automobile fuel combustion efficiency.

CO concentrations in the study area were modeled based on anticipated traffic speeds and volumes in the study area. Table 8-6 shows the results of the CO modeling analysis for the cumulative traffic scenario. As shown, the proposed project in conjunction with cumulative development in the study area is not expected to generate CO concentrations in excess of state or federal CO standards. This would be a less than significant cumulative impact.

The General Plan includes policies aimed at reducing ozone precursor and particulate emissions associated with cumulative development in Placer County. The portion of Placer County surrounding the proposed project site is currently designated as a severe non-attainment area with respect to the federal ozone standard; preliminary data indicate that the area will be similarly designated with respect to the new eight-hour federal ozone standard. The most recent Air Quality Attainment Plan for the area, written in 1982, outlined measures aimed at reducing emissions to achieve state and federal ozone and particulate standards; despite implementation of all feasible measures, however, in 1982 the County did not foresee achieving applicable ozone or particulate standards within the timeline required by Clean Air Acts. Furthermore, development in Placer County has continued to exceed expectations. Several developments described in the most recent General Plan for Placer County, including the proposed project, have not been accounted for in growth projections used to estimate future ozone precursor and particulate emissions. The effect of this is that cumulative development in Placer County will likely exacerbate existing air quality problems, and hinder the County's ability to attain state and federal ozone and particulate standards. The Placer County General Plan identifies the increase in air pollutant emissions (ozone precursors and PM<sub>10</sub> emissions as significant, and states that there are no measures available that would reduce this impact to a less than significant level. The Twelve Bridges Specific Plan and Clover Valley Lakes EIRs also identified this impact as cumulatively significant. The proposed project's contribution to ozone precursor and particulate emissions associated with cumulative development would therefore represent a significant, unavoidable adverse impact.

## Noise

Noise impacts from construction result from the operation of construction equipment and, to a lesser degree, noise generated by vehicle traffic traveling to and from the construction area. The magnitude of the impact depends on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the construction phase, the distance between the noise source and receptor, and the presence or absence of noise barriers. Construction generated noise would affect properties adjacent to the various construction sites; however this noise would be short-term and temporary, and would be a less than significant impact on cumulative noise resulting from development.

Cumulative operational noise impacts would result primarily from traffic noise on major roadways. Noise generated by non-transportation related noise sources would not be additive, as noise from these sources would occur in different portions of the County. Using the FHWA Traffic Noise Prediction Model and estimated traffic volumes and speeds for cumulative traffic conditions, future 24-hour average noise levels were predicted along major thoroughfares in the study area. Results of the noise level prediction indicated that noise levels generated by cumulative traffic volumes in the study area would be between 4 and 9 dBA greater than existing noise levels. The area of properties within the 60 dBA L<sub>dn</sub> would increase to approximately twice current areas with cumulative traffic growth.

The Placer County General Plan EIR concludes that no mitigation measures beyond the policies and programs included in the General Plan Policy Document are available that would reduce the potential future traffic noise impacts on existing noise-sensitive uses to a less than significant level. The traffic noise generated by the proposed project alone would be less than significant. Although off-site traffic noise levels generated by the proposed project would be less than significant, the combined effects of this impact would, when combined with other development, contribute to cumulatively significant traffic

noise identified in the Placer County General Plan Update EIR, the Twelve Bridges Specific Plan EIR and the Clover Valley Lakes EIR. Therefore, the cumulative impact of the project on traffic noise is considered significant and unavoidable.

### **Soils, Geology and Seismicity**

Potentially significant impacts are expected to occur as a result of the proposed project due to increased erosion, development constraints due to difficult excavation conditions, differential settlement, foundation instability and slope instability. Mitigation Measures G-A through G-C have been included in the proposed project that, when combined with EIR recommended mitigation measures, would reduce these impacts to a less than significant level. These impacts can be expected to occur with cumulative development in the County. Given the localized, short-term nature of these impacts and existing Placer County General Plan policies that address them, because the new development associated with the proposed project would not result in significant adverse impacts individually or cumulatively and cumulative impacts to soils, geology and seismicity were not identified in the Placer County General Plan Update EIR, the Twelve Bridges Specific Plan EIR or the Clover Valley Lakes EIR, it is concluded that the proposed project would not have a cumulatively significant adverse impact on soils, geology or seismicity.

### **Hazardous Waste/Materials**

The proposed project would have potentially significant impacts associated with possible contact with contaminated soils or release of hazardous substance during or after construction, with potential groundwater contamination associated with the NAPOTS well, or hazardous materials located in mine tunnels. Mitigation Measures HW-A through HW-H, included in Section 11.4 of this Draft EIR, when combined with EIR recommended mitigation measures, would reduce these impacts to a less than significant level. These impacts can be expected to occur with cumulative development in the County. Given the localized nature of these impacts and existing Placer County General Plan policies that address them, because the new development associated with the proposed project would not result in significant adverse impacts individually or cumulatively and cumulative impacts related to hazardous wastes/materials were not identified in the Placer County General Plan Update EIR, the Twelve Bridges Specific Plan EIR or the Clover Valley Lakes EIR, it is concluded that the proposed project would not have a cumulatively significant adverse impact related to hazardous wastes or materials..

### **Hydrology and Water Quality**

Cumulative development within the Auburn Ravine and Dry Creek watersheds would result in a significant increase in the risk of flooding due to an increase in surface drainage from new development, and potentially from new development encroaching on the 100-year flood plain. The County General Plan Policy Document identifies policies and programs designed to mitigate the increased risk of flooding due to cumulative development. With implementation of these policies and Mitigation Measures H-A and H-B, cumulative impacts are not expected to occur.

Groundwater impacts are local and less than significant. Cumulative impacts may be significant to groundwater if local aquifer extraction is increased and/or recharge area is reduced significantly by increasing impervious area.

Cumulative development within the Auburn Ravine and Dry Creek watersheds is expected to increase the potential for cumulative groundwater and surface water quality impacts. These impacts will result primarily from contaminated storm water runoff and use of individual septic systems.

Mitigation Measures H-A through H-K, included in Section 12.4 of this Draft EIR, would reduce these impacts to a less than significant level. These impacts can be expected to occur with cumulative development in the County. Given the localized nature of these impacts and existing Placer County General Plan policies that address them, significant cumulative impacts are not expected to occur.

## **Biology**

Increased development will occur because of the proposed project, in addition to two nearby, large residential projects, the Twelve Bridges Specific Plan and the Clover Valley Lakes project. The resulting increase in the human population and associated development will convert habitat and reduce the remaining habitat quality. Development identified for these projects and others in the County will cause substantial habitat conversion and habitat quality reduction in areas of unincorporated Placer County designated for rural residential uses.

The Twelve Bridges Specific Plan EIR identified the adverse impacts on plant and wildlife habitat, oak woodland, and special-status species as significant. The Clover Valley Lakes EIR identified significant impacts on oak woodland, wetlands, and valley oaks. Both documents mitigate biological resource impacts to a less than significant level with on-site compensation. The Placer County General Plan Final EIR identified the adverse impact on vegetation and wildlife associated with habitat conversion as significant. Although the policies and programs of the Placer County General Plan *Policy Document* would partially mitigate the effects of habitat loss, they would not reduce the impacts to a less than significant level.

Development of the proposed project would result in a substantial change in habitat types on the project site. Implementation of the Applicant's oak conservation and revegetation plan (Mitigation Measure B-A) and wetland preservation plan (Mitigation Measure B-E) would improve habitat quality in the parts of the project site that will remain natural open space. However, following project construction there would remain a net decrease in open space, grassland, oak woodland, and wetlands and an increase in developed area. Therefore, the cumulative impact of the project on biological resources is considered significant and unavoidable.

## **Cultural Resources**

Available information indicates that south Placer County is a rich source of cultural and paleontological material. Information from individual cultural resources are most valuable to the archaeological record collectively. A cultural context for the south Placer area may be established by combining these individual resources. Mitigation measures identified for the proposed project would reduce impacts to individual resources identified on-site. Placer County General Plan provides policies, which are essential to protecting cultural resources from future development. The Placer County General Plan EIR concludes that the cumulative impact of development on cultural resources is considered potentially significant. It concludes that no feasible mitigation measures beyond the policies and programs included in the General Plan Policy Document are available that would reduce the possibility of occasional accidental disruption of important archaeological, historic, or paleontological sites to a less than significant level. Because the mitigation measures proposed by the Applicant and additional mitigation measures identified in Section 14.4 of this Draft EIR (Mitigation Measures C-A through C-F) would avoid, cover, or protect known cultural resources on the project site, and because additional mitigation has been identified to deal with the unanticipated encountering of presently unknown cultural resources during construction, the proposed project's contribution to cumulative impacts on cultural resources is considered less than significant.



### **Visual Resources**

Due to existing rural development and other approved development within the study area, the Bickford Ranch project site is one of the few remaining undeveloped natural open spaces within the landscape setting. The local landscape setting consists of gently rolling terrain transitioning into several narrow ridges up to a broad, flat "mesa-like" ridge top. Rural residences and travelers on local roadways have open views into the rolling meadows at the northeastern part of the project site and "inferior" and partially screened views to the ridge tops along the remaining portions of the project site. It was determined that the Twelve Bridges development would result in significant and unavoidable impacts to views and scenic quality of the area, as would the Clover Valley Lakes development. Although the policies and programs of the County General Plan would partially mitigate the effects of development, as would the mitigation measures proposed by the Applicant and recommended in Section 15.4 of this Draft EIR (Mitigation Measures V-A through V-K) they would not reduce the cumulative impacts of development in this area on visual quality to a less than significant level. Therefore, the cumulative impact of the proposed project on visual resources is considered significant and unavoidable.